Appendix A
2018 Status Report Source Area Groundwater Contamination and Treatment System

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1. Introduction

1.1 Site Description

This appendix provides a summary of activities conducted between January 1 and December 31, 2018 related to the source area groundwater containment and treatment system (system) at the downgradient (eastern) boundary of the source area of the Charlie Burch Pits Site, Spring, Texas (Site) (Figure A-1). Monthly operations and maintenance (O&M) site visits were conducted from January through December 2018.

Observations suggest the system operated as designed with a small number of issues caused by severe weather conditions such as lightning or heavy rains. The upgraded EZ-6.4SS air stripper, which became operational on November 28, 2017, consists of three baffled aeration trays, downcomers, a sump, blower, and discharge pump. These are operated using a variable frequency drive to pump treated groundwater to newly constructed north and south infiltration galleries located on the adjacent Rummell Property. Injection into the infiltration galleries was not authorized by the Texas Council on Environmental Quality (TCEQ) until January 31, 2018; however, treated groundwater continues to be discharged to the flood control channel located adjacent to the system. Injection into the infiltration galleries will commence when Rohm and Haas Texas Inc. (Rohm and Haas) completes its evaluation of the iron fouling issue.

1.2 Report Objectives

This appendix has been prepared to satisfy certain objectives of the *Response Action Work Plan for Groundwater Remediation* (RAWP), which was submitted to TCEQ on October 8, 1999 and approved on November 10, 1999. In part, the RAWP calls for documenting groundwater remediation system operations in an annual report which includes summary information regarding the total gallons of groundwater recovered as well as analytical results for treated and discharged groundwater.

2. Description of Source Area Groundwater Containment and Treatment System

2.1 System Description

The system consisted of the following major components during the reporting period:

- Four Zone A recovery wells (each approximately 65 feet deep) and one Zone B recovery well (approximately 101 feet deep), equipped with Grundfos submersible electric pumps (Redi-Flo3) with 0.5-horsepower variable speed permanent- magnet motors powered by a 230-volt single-phase electrical source. A pressure transducer is positioned within each recovery well above the pump. The recovery well piping is equipped with a sampling port, a Signet magnetic flow element, a pressure gauge, and a Val Matic air release valve. Each recovery well and associated equipment and piping are housed inside a locked well vault.
- Subsurface high-density polyethylene piping to convey recovered groundwater from the wells to the air stripper treatment compound.
- The air stripper treatment compound consisted of a shallow tray low-profile stainless-steel multi-tray air stripper and an American Fan Company blower with upstream and downstream sampling ports through September 2017. It was replaced with a QED EZ-6.4SS air stripper, which has been operating at the site since November 28, 2017. Additional equipment located at the air stripper treatment compound includes Signet magnetic flow element which records combined (total) volume of system flow and instantaneous flow rate, a Weber vent-captor low air flow switch, and a Dwyer Magnehelic 2000 air pressure gauge.
- System controls housed in the electrical control building consist of six CU300 status control units (five for the recovery wells and one for total flow) and two control panels.

- Monitored alarms, which if triggered would shut down the system, include power interruption, low airflow in the air stripper, and low total system flow rate in the combined flow meter. An increased water level in a recovery well, which may indicate a pump has stopped, will also initiate a system alarm, but not initiate a shut down.

Following treatment, effluent from the system was discharged to the permitted outfall at the flood control channel immediately north of the site (Figure A_1) for all operating periods in 2018.

2.2 Air and Water Discharge Criteria

2.2.1 Air Discharge Criteria

Rohm and Haas submitted *Documentation of Claim for Standard Exemptions* in accordance with Title 30, Texas Administrative Code (TAC), Chapter 106.533 and 106.262 to the Texas Natural Resource Conservation Commission (TNRCC, predecessor to TCEQ) on February 15, 1999 for discharge to the air from operation of the system. TNRCC authorized the exemptions in a letter dated March 23, 1999 (Appendix F of RAWP).

2.2.2 Water Discharge Criteria

Information regarding water discharge criteria is separated into two categories: flood control channel and infiltration galleries. Discharge to the flood control channels have been used as of this reporting period.

2.2.2.1 Flood Control Channel

The treated groundwater was discharged only to Flood Control Channel IIID in this reporting period, which is a constructed channel managed by the Montgomery County Drainage District. Rohm and Haas received permission to discharge treated water from the District (letter dated January 20, 1999 from Herman I. Little, Jr., to Rohm and Haas; Appendix D of RAWP). Authorization to discharge treated water to state waterways, with associated discharge criteria, was received from TCEQ (letter dated March 23, 1999; Appendix E of RAWP). In an interoffice memorandum attached to a TCEQ letter dated March 18, 2002, the TCEQ Industrial Permits Team recommended changes to several of the effluent limits for the discharge (i.e., reductions for 2-butanone, ethyl methacrylate, methyl methacrylate; increases for acetone and 2,4 dimethylphenol; and a tighter range for pH).

Principal effluent limitations if discharging to the flood control channel are summarized below:

- The daily average flow of effluent shall not exceed 170,000 gallons per day (118 gallons per minute).
- Specified effluent limitations shall not be exceeded (Table A-1). Current effluent limitations reflect the recommendations of the TCEQ interoffice memorandum dated March 18, 2002, including a pH between 6 and 9 and modifications to effluent limits for 2-butanone, ethyl methacrylate, methyl methacrylate, acetone, and 2,4-dimethylphenol.
- Water discharge from the site shall be monitored (sampled) at a minimum of once every 2 weeks for all listed parameters.
- Water discharge from the site shall be monitored biweekly instead of daily for pH as per the TCEQ Interoffice Memorandum dated October 9, 2018
- Water discharge from the site shall not contain floating solids, visible oils or visible foam in other than trace amounts.

None of the principal effluent limitations were exceeded during the reporting period.

2.2.2.2 Infiltration Galleries

Discharges to the infiltration galleries were not initiated in 2018 due to the high iron fouling, which may cause clogging issues in the infiltration galleries. The assessment of an iron sequestration system is being evaluated.

2.2.3 2018 Air Discharge Calculations

Previous estimates indicated that quantities of constituents of concern (COCs) to be discharged from the air stripper would be less than applicable limits. To verify previous findings, concentrations in recovered groundwater, as measured in samples collected in December 2018, were used to estimate the current discharge of COCs to air. The five indicator parameters measured in groundwater collected from five source area recovery wells included two volatile organic compounds (VOCs) (benzene and 1,2-dichloroethane [1,2-DCA]) and three semivolatile organic compounds (SVOCs) (aniline; o-cresol; and 2,4-dimethylphenol). Influent groundwater concentrations to the air stripper were estimated as the average of the detected values reported by the laboratory, which represents a conservative method for estimating COCs discharged from the air stripper, since benzene was only detected in one recovery well RW-CB-4R (Table A_2). Three COCs (aniline, o-cresol and 2,4-dimethylphenol) were not detected in any of the five groundwater recovery wells; therefore, air discharge calculations were completed for benzene and 1,2-DCA.

Calculations indicate quantities of benzene and 1,2-DCA discharged are less than the maximum allowable emission rates. Input parameters, rationale for input values used to calculate emissions, and results are summarized in Table A-3. Discharge rates from the air stripper for benzene and 1,2-DCA are three to four orders of magnitude below the respective maximum allowable emissions. Therefore, the air stripper is in compliance with Standard Exemptions 106.533 and 106.262.

The following table summarizes the maximum allowable emission rate and calculated emission rate from the air stripper for benzene and 1,2-DCA:

Constituent	Maximum Allowable Emission (pounds per hour)	Calculated Emission from Air Stripper (pounds per hour)
Benzene	0.046	9.1 E-07
1,2-DCA	0.62	0.00018

3. System Operations, Maintenance, and Sampling

This section discusses system sampling and O&M from January through December 2018.

3.1 System Operations and Maintenance

3.1.1 System Sampling

In accordance with the discharge permit, system sampling visits were performed on a biweekly (once every 2 weeks) schedule. The sampling program included the following elements:

- *Biweekly Effluent and Influent Monitoring:* Effluent and influent water samples were collected, and the samples submitted to SGS Accutest Laboratory, Houston, Texas for analysis of the parameters listed in Table A-1.

3.1.2 Operations and Maintenance

The O&M program included the following elements during each visit:

- *System Inspection:* During inspection the following flow parameters were recorded: pump pressures; total volumetric flow and flow rate from each well; total volumetric flow and flow rate from the combined flow line upstream of the air stripper; pH of effluent groundwater; and pump speed.

O&M issues encountered during the reporting period included:

- *Buildup of iron oxide in air stripper:* Due to oxidation of naturally-occurring iron dissolved in the shallow groundwater, some iron oxide precipitate accumulates within the air stripper, the discharge piping leading to the outfall, and on soil and rocks directly below the outfall. This accumulation of iron oxide does not represent an environmental concern; however, uncontrolled precipitation of iron oxide

can restrict airflow and decrease treatment efficiency in the air stripper. Iron oxide precipitate levels within the air stripper are monitored and tray cleaning is conducted with a liquid high-pressure wand, as needed.

The following summarizes air stripper cleaning activities during the reporting period.

  - February 28, 2018: The air stripper trays and air stripper interior were washed and cleaned.
  - August 2, 2018: The air stripper trays and air stripper interior were washed and cleaned.

- *Temporary System Shutdowns:* System shutdowns exceeding 24 hours occurred for the following reasons.
  - April 16 - 19, 2018: Temporary shutdown due to maintenance of air stripper.

3.2 Groundwater Recovery Volume

Based upon the flow volume readings located at the treatment compound and presented in Table A-4, approximately 5.4 million gallons of groundwater were recovered between December 31, 2017, and December 31, 2018. The total recovered groundwater at the site (2000-2018) has been approximately 165.23 million gallons.

3.3 Effluent Sampling Results

The results of effluent sample analyses are presented in Table A-5. As shown, all sample results from the reporting period are below their applicable discharge criteria. Laboratory analytical reports are available upon request. A summary of the results is as follows:

- The 1,2-DCA concentrations in the effluent ranged from nondetect (generally less than 0.00030 milligrams per liter [mg/L]) to 0.0120 mg/L. These are below both the daily average and daily maximum discharge limits of 1.1 mg/L and 2.4 mg/L, respectively (Table A-1). This indicates the air stripper was effectively removing 1,2-DCA from recovered (influent) groundwater, which ranged from 0.0164 to 0.269 mg/L in 2018.
- Water discharge from the site has not exhibited floating solids, visible oils, or visible foam.
- The outfall measurements indicate pH remained between 6 and 9, with an average pH of 7.05 in 2018. The pH measurements were measured manually and by the laboratory to confirm accuracy. The pH data are presented in Table A-6.

3.4 Recovery Well Sampling Results

As part of the system O&M program, annual groundwater samples were collected from the recovery wells in October 2018 (Table A-7). Analytical results from the sampling events suggest concentrations of 1,2-DCA in the influent are stable. The associated laboratory report is included as Attachment A-1.

3.5 Summary

The following objectives have been met for 2018:

- *Capture Zone:* The system continues to create a capture zone that limits offsite migration of impacted groundwater.
- *Treatment Effectiveness:* The system continues to operate and meet discharge standards listed in Table A-1 in accordance with the discharge permit.

Tables

Table A-1. Effluent Limitations for Discharge of Treated Water to Flood Control Channel IIID
Charlie Burch Pits Site, Spring, Texas

Pollutant	Daily Average mg/L	Daily Maximum mg/L
1,2-Dichloroethane	1.1	2.4
2-Butanone	214	453
Acetone	512	711
Benzene	—	0.05
BTEX (benzene, toluene, ethylbenzene, and xylene)	—	0.5
Ethyl Methacrylate	58.7	124
Methyl Methacrylate	58.7	124
Isobutanol	297	629
2,4-Dimethylphenol	1.7	3.6
Cresols, Total	944	1998
pH	Maintain between 6 and 9 standard units	

Table A-2. Results of Groundwater Testing: Average Concentration of Indicator Parameters in Recovery Wells

Sampling Period: October 16, 2018

Charlie Burch Pits Site, Spring, Texas

	Zone A				Zone B
SAMPLE LOCATION DATE SAMPLED DATE ANALYZED SCREENED INTERVAL (ft bgs)	RW-CB-2R 10/16/2018 10/19/2018 44.85-64.85	RW-CB-3R 10/16/2018 10/19/2018 45.0-65.0	RW-CB-4R 10/16/2018 10/19/2018 44.0-64.0	RW-CB-5R 10/16/2018 10/19/2018 45.0-65.0	RW-CB-3D 10/16/2018 10/19/2018 71.4-101.0
Analyte	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds					
Benzene	<0.00040	<0.00040	**0.00077 J**	<0.00040	<0.00040
Dichloroethane, 1,2-	**0.0142**	**0.0473**	**0.0587**	**0.0250**	**0.0133**
Semivolatile Organic Compounds					
Aniline	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Cresol, o-	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Dimethylphenol, 2,4-	<0.0010	<0.0011	<0.0011	<0.0011	<0.0011

	No. of Samples	No. of Detects	Minimum	Maximum	Average	Standard Deviation
Analyte	—	—	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds						
Benzene	5	1	<0.00040	0.00077	0.00047	0
Dichloroethane, 1,2-	5	5	0.0133	0.0587	0.0317	0.020
Semivolatile Organic Compounds						
Aniline	5	0	—	—	—	—
Methylphenol, 2	5	0	—	—	—	—
Dimethylphenol, 2,4-	5	0	—	—	—	—

Notes:

Groundwater samples collected at the locations shown on Figure A.1.

Samples analyzed in accordance with U.S. EPA Methods 8260 (volatile organic compounds) and 8270 (semi-volatile organic compounds) by SGS Accutest Laboratories, Houston, Texas.

Mg/L= Milligrams per liter

Bold type indicates an analyte detection greater than the method detection limit (MDL).

< = Analyte not detected above the MDL.

J = Estimated concentration, detected between the Reporting Limit and MDL.

— = No numerical value applies.

Table A-3. Comparison of Estimated Air Discharge from Air Stripper to Limits Under Standard Exemption 30 TAC 106.262

Sampling Period: October 2018

Charlie Burch Pits Site, Spring, Texas

Analyte	CALCULATION OF ALLOWABLE EMISSIONS			CALCULATION OF ESTIMATED EMISSIONS				
	Limit Value (L) for Standard Exemption 106.262 (mg/m^3)	K —	Maximum Allowable Emission (E) (lb/hr)	Estimated Concentration in GW (mg/L)	Estimated GW Flow Rate (gpm)	Fraction Discharged into Air (%)	Calculated Emission from Air Stripper (lb/hr)	Calculated Emission Less Than Allowable (E)?
Volatile Organic Compounds (VOCs)								
Benzene	3	65	4.6E-02	1.5E-04	9.6	100%	7.4E-07	YES
Dichloroethane, 1,2	40	65	6.2E-01	3.1E-02	9.6	100%	1.5E-04	YES
Semivolatile Organic Compounds (SVOCs)								
Aniline	7.6	65	1.2E-01	ND	9.6	5%	—	—
Cresol, o-	0.12	65	1.8E-03	ND	9.6	5%	—	—
Dimethylphenol, 2,4-	45	65	6.9E-01	ND	9.6	5%	—	—

Notes:
Limit Values obtained from the following sources:

- Benzene: Figure 2 [30 TAC 106.262(a)(2)].
- O-cresol: Outdated Exemption List, Subchapter K - 11/26/97 (GSI, "Documentation of Claim for Standard Exemptions 106.533 and 106.262 for Soil and Groundwater Remediation Project," Charlie Burch Site, Rohm and Haas Texas, Inc., 2/15/99). Note that current rule lists 0.5 as the Limit Value for o-cresol.
- 1,2-dichloroethane and aniline: time-weighted average Threshold Limit Value (ACGIH, "TLVs and BEIs, 1997).
- 2,4-dimethylphenol: time-weighted average Threshold Limit Value (U.S. Coast Guard, "Chemical Hazards Response Information System, Hazardous Chemical Data Manual," Commandant Instruction M16465.12B, 1997).

Maximum allowable emission (E) calculated in accordance with 30 TAC 106.262 as E= L/K, where K obtained from Figure 1, 30 TAC 106.262(a)(2) based on distance to nearest off-site receptor of 600 ft.
mg/L= Milligrams per liter
lb/hr= Pounds per hour
Estimated concentration in groundwater based on samples collected during the source area sampling in October 2018. Estimated concentration represents average of concentrations from the five recovery wells whose flow is routed to the air stripper. For values less than detection limit, concentration of the analyte was assumed to be zero for calculating the average value (see Table A.2).
Air stripper removal efficiency estimated as 100% of VOCs and 5% of SVOCs (GSI, "Documentation of Claim for Standard Exemptions 106.533 and 106.262 for Soil and Groundwater Remediation Project," Charlie Burch Site, Rohm and Haas, Spring, Texas, 2/15/99).
Groundwater flowrate was measured on December 12, 2018 and is assumed to be approximately the average flowrate throughout 2018.
ND = constituent not detected in any groundwater sample from recovery wells.
— = Value could not be calculated.

Table A-4. System Inspection Results: Site Visits

Charlie Burch Pits Site, Spring, Texas

Inspection Date	Effluent Discharge Rate (gpm) [daily limit of 118 gpm]		
	Measured Effluent Flow Rate (gpm)	Effluent Total Flow (gallon)	Average Monthly Discharge Rate
1/26/2018	11.2	843,238.0	18.9
2/27/2018	NA	NA	11.3*
3/28/2018	11.9	1,701,983.0	9.0
4/1/2018	NA	NA	16.1*
5/30/2018	14.1	2,743,594.3	7.8
6/30/2018	13.8	3,090,798.0	8.0
7/1/2018	NA	NA	6.7*
8/16/2018	13.5	3,687,277.0	6.7
9/20/2018	8.8	4,312,661.0	14.5
10/17/2018	NA	NA	8.4 *
11/15/2018	10.5	5,058,821.0	8.6
12/12/2018	9.6	5,356,683.0	6.7

Notes:

2018 discharge = 5,356,683 gallons (10.3 gpm)

Effluent discharge rate daily limit of 118 gpm

*= Value is an assumed estimate based on previous monthly flow trends

NA - Data not recorded in the inspection record.

gpm = gallons per minute

Table A-5. Recovery System Inspection Results

Charlie Burch Pits Site, Spring, Texas

	Units	Daily Effluent Limitation Avg	Daily Effluent Limitation Max	1/12/18	1/26/18	2/8/18	2/23/18	3/9/18	3/22/18	4/6/18	4/20/18	5/4/18	5/24/18	6/1/18	6/14/18	6/29/18
Field Analysis of Treated Effluent																
Magnehelinic Gauge	in. H2O	-	-	25.0	26.0	28	24.0	25.0	25.0	25.0	-	-	-	-	-	-
pH (Influent)	std units	-	-	4.71	5.40	4.61	5.95	4.97	5.79	5.85	-	-	-	-	-	-
pH (Outfall)	std units	6 > pH > 9		6.35	6.45	6.20	7.17	6.14	7.27	7.04	6.80	6.98	6.60	6.73	7.26	7.39
pH (10' upstream)	std units	-	-	6.72	8.35	7.56	7.68	8.21	8.81	8.05	-	-	-	-	-	
pH (30' downstream)	std units	-	-	6.85	8.01	7.26	7.44	7.99	8.65	7.97	-	-	-	-	-	-
Analysis of System Effluent																
Volatile Organic Compounds																
1,2-Dichoroethane	mg/L	1.1	2.4	0.00034 J	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00031	0.00082	0.0010	0.0018	0.0027
Acetone	mg/L	512	711	<0.010	0.0144 J	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0120	0.0162	<0.010	<0.010
Benzene	mg/L	-	0.05	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00040
Ethylbenzene	mg/L	-	0.5	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00041
Ethyl Methacrylate	mg/L	58.7	124	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00048
Isobutanol (Isobutyl alcohol)	mg/L	297	629	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Methyl Methacrylate	mg/L	58.7	124	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00044
Methyl ethyl ketone (2-butanone)	mg/L	214	453	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	0.0122	<0.0026	0.0104	0.0035	0.0823	0.115	<0.0026	<0.0026
Toluene	mg/L	-	0.5	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00042
Xylenes	mg/L	-	0.5	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00039
Semi-Volatile Organic Compounds																
Cresols, Total	mg/L	944	1998	<0.0016	<0.0016	<0.0016	<0.0016	<0.0015	<0.0015	<0.0015	<0.0030	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
2,4-Dimethylphenol	mg/L	1.7	3.6	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0010	<0.0010	<0.0010	<0.0011	<0.0010	<0.0010	<0.0011	<0.0010
Analysis of System Influent																
Volatile Organic Compounds																
1,2-Dichoroethane	mg/L	1.1	2.4	NM	NM	0.0181	0.0198	NM	NM	NM	0.0269	0.023	0.0164	0.0167	0.0177	0.0189
Acetone	mg/L	214	453	NM	NM	<0.010	<0.010	NM	NM	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzene	mg/L	-	0.05	NM	NM	<0.00030	<0.00030	NM	NM	NM	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00040
Ethylbenzene	mg/L	512	711	NM	NM	<0.00030	<0.00030	NM	NM	NM	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00041
Ethyl Methacrylate	mg/L	-	0.5	NM	NM	<0.00036	<0.00036	NM	NM	NM	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00048
Isobutanol (Isobutyl alcohol)	mg/L	-	0.5	NM	NM	<0.020	<0.020	NM	NM	NM	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Methyl Methacrylate	mg/L	-	0.5	NM	NM	<0.00081	<0.00081	NM	NM	NM	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00044
Methyl ethyl ketone (2-butanone)	mg/L	297	629	NM	NM	<0.0026	<0.0026	NM	NM	NM	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Toluene	mg/L	58.7	124	NM	NM	<0.00030	<0.00030	NM	NM	NM	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00042
Xylenes	mg/L	58.7	124	NM	NM	<0.00065	<0.00065	NM	NM	NM	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00039
Semi-Volatile Organic Compounds																
Cresols, Total	mg/L	944	1998	NM	NM	<0.0016	<0.0016	NM	NM	NM	<0.0030	<0.0014	<0.0014	<0.0014	<0.0015	<0.0014
2,4-Dimethylphenol	mg/L	1.7	3.6	NM	NM	<0.0011	<0.0011	NM	NM	NM	<0.0011	<0.0011	<0.0010	<0.0010	<0.0011	<0.0010

Table A-5. Recovery System Inspection Results

Charlie Burch Pits Site, Spring, Texas

	Units	Daily Effluent Limitation Avg	Daily Effluent Limitation Max	7/13/18	7/27/18	8/10/18	8/22/18	9/5/18	9/19/18	10/3/18	10/17/18	10/31/18	11/13/18	11/28/18	12/12/18	12/21/18
Field Analysis of Treated Effluent																
Magnehelinic Gauge	in. H2O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (Influent)	std units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (Outfall)	std units	6 > pH > 9		7.13	6.55	7.28	7.31	7.27	7.27	6.9	7.27	7.37	7.14	6.43	7.43	6.92
pH (10' upstream)	std units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (30' downstream)	std units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Analysis of System Effluent																
Volatile Organic Compounds																
1,2-Dichoroethane	mg/L	1.1	2.4	0.0083	0.0120	0.0012	0.0017	0.0017	0.0014	0.0017	0.0019	0.0040	0.0022	0.0038	0.0041	0.0045
Acetone	mg/L	512	711	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzene	mg/L	-	0.05	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	-	0.5	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Ethyl Methacrylate	mg/L	58.7	124	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Isobutanol (Isobutyl alcohol)	mg/L	297	629	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Methyl Methacrylate	mg/L	58.7	124	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Methyl ethyl ketone (2-butanone)	mg/L	214	453	<0.0026	0.0076	0.0149	<0.0026	0.0189	0.0078	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Toluene	mg/L	-	0.5	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Xylenes	mg/L	-	0.5	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
Semi-Volatile Organic Compounds																
Cresols, Total	mg/L	944	1998	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
2,4-Dimethylphenol	mg/L	1.7	3.6	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Analysis of System Influent																
Volatile Organic Compounds																
1,2-Dichoroethane	mg/L	1.1	2.4	0.0216	0.0254	0.0191	0.0203	0.0187	0.0210	0.0221	0.0189	0.0221	0.0232	0.0273	0.0223	0.0203
Acetone	mg/L	214	453	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzene	mg/L	-	0.05	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	512	711	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Ethyl Methacrylate	mg/L	-	0.5	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Isobutanol (Isobutyl alcohol)	mg/L	-	0.5	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Methyl Methacrylate	mg/L	-	0.5	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Methyl ethyl ketone (2-butanone)	mg/L	297	629	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Toluene	mg/L	58.7	124	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Xylenes	mg/L	58.7	124	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
Semi-Volatile Organic Compounds																
Cresols, Total	mg/L	944	1998	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
2,4-Dimethylphenol	mg/L	1.7	3.6	<0.0010	<0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Notes:

1. Samples analyzed by SGS Accutest Laboratories, Houston, Texas, in accordance with the following USEPA SW-846 methods; volatile organic compounds (VOCs) by Method 8260B and semi-volatile organic

compounds (SVOCs) by Method 8270C.

2. mg/l= Milligrams per liter; std units= Standard units

3. J = Estimated concentration; constituent detected between the Method Detection Limit and the Report Limit.

NM = Not measured; - = No effluent limitation value specified

3. Air stripper trays were pressure washed and cleaned on: February 28th and August 2nd, 2018.

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
January 2018				
1/1/2018	No Reading Obtained	Multimeter	4.0, 7.0	
1/2/2018	6.72	Multimeter	4.0, 7.0	
1/3/2018	7.06	Multimeter	4.0, 7.0	
1/4/2018	7.05	Multimeter	4.0, 7.0	
1/5/2018	7.35	Multimeter	4.0, 7.0	
1/6/2018	7.02	Multimeter	4.0, 7.0	
1/7/2018	6.82	Multimeter	4.0, 7.0	
1/8/2018	6.93	Multimeter	4.0, 7.0	
1/9/2018	6.97	Multimeter	4.0, 7.0	
1/10/2018	6.89	Multimeter	4.0, 7.0	
1/11/2018	6.85	Multimeter	4.0, 7.0	
1/12/2018	7.08	Multimeter	4.0, 7.0	
1/13/2018	No Reading Obtained	Multimeter	4.0, 7.0	
1/14/2018	No Reading Obtained	Multimeter	4.0, 7.0	
1/15/2018	6.95	Multimeter	4.0, 7.0	
1/16/2018	No Reading Obtained	Multimeter	4.0, 7.0	
1/17/2018	7.40	Multimeter	4.0, 7.0	
1/18/2018	6.75	Multimeter	4.0, 7.0	
1/19/2018	7.10	Multimeter	4.0, 7.0	
1/20/2018	7.15	Multimeter	4.0, 7.0	
1/21/2018	7.01	Multimeter	4.0, 7.0	
1/22/2018	7.08	Multimeter	4.0, 7.0	
1/23/2018	7.19	Multimeter	4.0, 7.0	
1/24/2018	7.06	Multimeter	4.0, 7.0	
1/25/2018	6.84	Multimeter	4.0, 7.0	
1/26/2018	6.85	Multimeter	4.0, 7.0	
1/27/2018	6.85	Multimeter	4.0, 7.0	
1/28/2018	6.99	Multimeter	4.0, 7.0	
1/29/2018	6.75	Multimeter	4.0, 7.0	
1/30/2018	6.65	Multimeter	4.0, 7.0	
1/31/2018	7.07	Multimeter	4.0, 7.0	
February 2018				
2/1/2018	6.89	Multimeter	4.0, 7.0	
2/2/2018	6.84	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
2/3/2018	6.54	Multimeter	4.0, 7.0	
2/4/2018	6.67	Multimeter	4.0, 7.0	
2/5/2018	6.68	Multimeter	4.0, 7.0	
2/6/2018	6.65	Multimeter	4.0, 7.0	
2/7/2018	6.92	Multimeter	4.0, 7.0	
2/8/2018	6.75	Multimeter	4.0, 7.0	
2/9/2018	6.89	Multimeter	4.0, 7.0	
2/10/2018	6.80	Multimeter	4.0, 7.0	
2/11/2018	6.74	Multimeter	4.0, 7.0	
2/12/2018	6.93	Multimeter	4.0, 7.0	
2/13/2018	7.23	Multimeter	4.0, 7.0	
2/14/2018	6.79	Multimeter	4.0, 7.0	
2/15/2018	7.49	Multimeter	4.0, 7.0	
2/16/2018	7.07	Multimeter	4.0, 7.0	
2/17/2018	6.89	Multimeter	4.0, 7.0	
2/18/2018	6.69	Multimeter	4.0, 7.0	
2/19/2018	6.88	Multimeter	4.0, 7.0	
2/20/2018	7.06	Multimeter	4.0, 7.0	
2/21/2018	6.96	Multimeter	4.0, 7.0	
2/22/2018	7.38	Multimeter	4.0, 7.0	
2/23/2018	7.19	Multimeter	4.0, 7.0	
2/24/2018	6.78	Multimeter	4.0, 7.0	
2/25/2018	7.02	Multimeter	4.0, 7.0	
2/26/2018	7.16	Multimeter	4.0, 7.0	
2/27/2018	7.17	Multimeter	4.0, 7.0	
2/28/2018	6.79	Multimeter	4.0, 7.0	
March 2018				
3/1/2018	7.01	Multimeter	4.0, 7.0	
3/2/2018	6.88	Multimeter	4.0, 7.0	
3/3/2018	7.09	Multimeter	4.0, 7.0	
3/4/2018	7.34	Multimeter	4.0, 7.0	
3/5/2018	7.31	Multimeter	4.0, 7.0	
3/6/2018	6.91	Multimeter	4.0, 7.0	
3/7/2018	6.83	Multimeter	4.0, 7.0	
3/8/2018	6.84	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
3/9/2018	7.14	Multimeter	4.0, 7.0	
3/10/2018	6.83	Multimeter	4.0, 7.0	
3/11/2018	6.79	Multimeter	4.0, 7.0	
3/12/2018	6.91	Multimeter	4.0, 7.0	
3/13/2018	7.14	Multimeter	4.0, 7.0	
3/14/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/15/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/16/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/17/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/18/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/19/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/20/2018	No Reading Obtained	Multimeter	4.0, 7.0	
3/21/2018	7.19	Multimeter	4.0, 7.0	
3/22/2018	7.21	Multimeter	4.0, 7.0	
3/23/2018	7.24	Multimeter	4.0, 7.0	
3/24/2018	7.44	Multimeter	4.0, 7.0	
3/25/2018	6.94	Multimeter	4.0, 7.0	
3/26/2018	6.75	Multimeter	4.0, 7.0	
3/27/2018	6.73	Multimeter	4.0, 7.0	
3/28/2018	6.80	Multimeter	4.0, 7.0	
3/29/2018	7.99	Multimeter	4.0, 7.0	
3/30/2018	6.94	Multimeter	4.0, 7.0	
3/31/2018	No Reading Obtained	Multimeter	4.0, 7.0	
April 2018				
4/1/2018	No Reading Obtained	Multimeter	4.0, 7.0	
4/2/2018	7.98	Multimeter	4.0, 7.0	
4/3/2018	7.33	Multimeter	4.0, 7.0	
4/4/2018	7.13	Multimeter	4.0, 7.0	
4/5/2018	6.89	Multimeter	4.0, 7.0	
4/6/2018	6.98	Multimeter	4.0, 7.0	
4/7/2018	No Reading Obtained	Multimeter	4.0, 7.0	
4/8/2018	No Reading Obtained	Multimeter	4.0, 7.0	
4/9/2018	7.26	Multimeter	4.0, 7.0	
4/10/2018	7.15	Multimeter	4.0, 7.0	
4/11/2018	7.05	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
4/12/2018	7.00	Multimeter	4.0, 7.0	
4/13/2018	6.97	Multimeter	4.0, 7.0	
4/14/2018	No Reading Obtained	Multimeter	4.0, 7.0	
4/15/2018	No Reading Obtained	Multimeter	4.0, 7.0	
4/16/2018	No Reading Obtained	Multimeter	4.0, 7.0	Air-stripper inactive due to maintenance by Parsons (Well Development and misc. tasks)
4/17/2018	No Reading Obtained	Multimeter	4.0, 7.0	Air-stripper inactive due to maintenance by Parsons (Well Development and misc. tasks)
4/18/2018	No Reading Obtained	Multimeter	4.0, 7.0	Air-stripper inactive due to maintenance by Parsons (Well Development and misc. tasks)
4/19/2018	No Reading Obtained	Multimeter	4.0, 7.0	Air-stripper inactive due to maintenance by Parsons (Well Development and misc. tasks)
4/20/2018	6.80	Multimeter	4.0, 7.0	
4/21/2018	7.20	Multimeter	4.0, 7.0	
4/22/2018	7.29	Multimeter	4.0, 7.0	
4/23/2018	7.11	Multimeter	4.0, 7.0	
4/24/2018	7.06	Multimeter	4.0, 7.0	
4/25/2018	7.11	Multimeter	4.0, 7.0	
4/26/2018	7.05	Multimeter	4.0, 7.0	
4/27/2018	7.27	Multimeter	4.0, 7.0	
4/28/2018	7.31	Multimeter	4.0, 7.0	
4/29/2018	7.27	Multimeter	4.0, 7.0	
4/30/2018	6.95	Multimeter	4.0, 7.0	
May 2018				
5/1/2018	7.05	Multimeter	4.0, 7.0	
5/2/2018	7.10	Multimeter	4.0, 7.0	
5/3/2018	6.85	Multimeter	4.0, 7.0	
5/4/2018	6.98	Multimeter	4.0, 7.0	
5/5/2018	7.01	Multimeter	4.0, 7.0	
5/6/2018	7.06	Multimeter	4.0, 7.0	
5/7/2018	6.87	Multimeter	4.0, 7.0	
5/8/2018	6.95	Multimeter	4.0, 7.0	
5/9/2018	7.16	Multimeter	4.0, 7.0	
5/10/2018	6.87	Multimeter	4.0, 7.0	
5/11/2018	7.71	Multimeter	4.0, 7.0	
5/12/2018	7.06	Multimeter	4.0, 7.0	
5/13/2018	7.17	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
5/14/2018	6.85	Multimeter	4.0, 7.0	
5/15/2018	6.79	Multimeter	4.0, 7.0	
5/16/2018	6.81	Multimeter	4.0, 7.0	
5/17/2018	6.67	Multimeter	4.0, 7.0	
5/18/2018	7.24	Multimeter	4.0, 7.0	
5/19/2018	6.76	Multimeter	4.0, 7.0	
5/20/2018	6.71	Multimeter	4.0, 7.0	
5/21/2018	6.71	Multimeter	4.0, 7.0	
5/22/2018	6.77	Multimeter	4.0, 7.0	
5/23/2018	6.94	Multimeter	4.0, 7.0	
5/24/2018	6.60	Multimeter	4.0, 7.0	
5/25/2018	6.75	Multimeter	4.0, 7.0	
5/26/2018	6.81	Multimeter	4.0, 7.0	
5/27/2018	6.78	Multimeter	4.0, 7.0	
5/28/2018	6.99	Multimeter	4.0, 7.0	
5/29/2018	7.02	Multimeter	4.0, 7.0	
5/30/2018	7.13	Multimeter	4.0, 7.0	
5/31/2018	6.71	Multimeter	4.0, 7.0	
June 2018				
6/1/2018	6.73	Multimeter	4.0, 7.0	
6/2/2018	6.60	Multimeter	4.0, 7.0	
6/3/2018	6.69	Multimeter	4.0, 7.0	
6/4/2018	6.99	Multimeter	4.0, 7.0	
6/5/2018	6.81	Multimeter	4.0, 7.0	
6/6/2018	7.20	Multimeter	4.0, 7.0	
6/7/2018	7.28	Multimeter	4.0, 7.0	
6/8/2018	6.87	Multimeter	4.0, 7.0	
6/9/2018	6.82	Multimeter	4.0, 7.0	
6/10/2018	6.94	Multimeter	4.0, 7.0	
6/11/2018	7.13	Multimeter	4.0, 7.0	
6/12/2018	6.92	Multimeter	4.0, 7.0	
6/13/2018	7.41	Multimeter	4.0, 7.0	
6/14/2018	7.26	Multimeter	4.0, 7.0	
6/15/2018	7.29	Multimeter	4.0, 7.0	
6/16/2018	7.15	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
6/17/2018	7.23	Multimeter	4.0, 7.0	
6/18/2018	7.19	Multimeter	4.0, 7.0	
6/19/2018	7.34	Multimeter	4.0, 7.0	
6/20/2018	7.42	Multimeter	4.0, 7.0	
6/21/2018	7.15	Multimeter	4.0, 7.0	
6/22/2018	7.39	Multimeter	4.0, 7.0	
6/23/2018	7.22	Multimeter	4.0, 7.0	
6/24/2018	7.38	Multimeter	4.0, 7.0	
6/25/2018	7.40	Multimeter	4.0, 7.0	
6/26/2018	7.37	Multimeter	4.0, 7.0	
6/27/2018	7.31	Multimeter	4.0, 7.0	
6/28/2018	7.40	Multimeter	4.0, 7.0	
6/29/2018	7.39	Multimeter	4.0, 7.0	
6/30/2018	7.51	Multimeter	4.0, 7.0	
July 2018				
7/1/2018	7.42	Multimeter	4.0, 7.0	
7/2/2018	7.05	Multimeter	4.0, 7.0	
7/3/2018	7.57	Multimeter	4.0, 7.0	
7/4/2018	7.32	Multimeter	4.0, 7.0	
7/5/2018	7.49	Multimeter	4.0, 7.0	
7/6/2018	7.30	Multimeter	4.0, 7.0	
7/7/2018	7.27	Multimeter	4.0, 7.0	
7/8/2018	7.35	Multimeter	4.0, 7.0	
7/9/2018	7.67	Multimeter	4.0, 7.0	
7/10/2018	7.29	Multimeter	4.0, 7.0	
7/11/2018	7.18	Multimeter	4.0, 7.0	
7/12/2018	7.15	Multimeter	4.0, 7.0	
7/13/2018	7.13	Multimeter	4.0, 7.0	
7/14/2018	7.21	Multimeter	4.0, 7.0	
7/15/2018	7.25	Multimeter	4.0, 7.0	
7/16/2018	7.19	Multimeter	4.0, 7.0	
7/17/2018	7.08	Multimeter	4.0, 7.0	
7/18/2018	7.12	Multimeter	4.0, 7.0	
7/19/2018	7.08	Multimeter	4.0, 7.0	
7/20/2018	7.01	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
7/21/2018	6.86	Multimeter	4.0, 7.0	
7/22/2018	7.3	Multimeter	4.0, 7.0	
7/23/2018	7.05	Multimeter	4.0, 7.0	
7/24/2018	6.91	Multimeter	4.0, 7.0	
7/25/2018	6.84	Multimeter	4.0, 7.0	
7/26/2018	6.7	Multimeter	4.0, 7.0	
7/27/2018	6.55	Multimeter	4.0, 7.0	
7/28/2018	6.53	Multimeter	4.0, 7.0	
7/29/2018	6.6	Multimeter	4.0, 7.0	
7/30/2018	6.42	Multimeter	4.0, 7.0	
7/31/2018	6.58	Multimeter	4.0, 7.0	
August 2018				
8/1/2018	6.84	Multimeter	4.0, 7.0	
8/2/2018	6.79	Multimeter	4.0, 7.0	
8/3/2018	7.18	Multimeter	4.0, 7.0	
8/4/2018	6.92	Multimeter	4.0, 7.0	
8/5/2018	7.06	Multimeter	4.0, 7.0	
8/6/2018	7.33	Multimeter	4.0, 7.0	
8/7/2018	7.19	Multimeter	4.0, 7.0	
8/8/2018	7.1	Multimeter	4.0, 7.0	
8/9/2018	7.21	Multimeter	4.0, 7.0	
8/10/2018	7.28	Multimeter	4.0, 7.0	
8/11/2018	6.91	Multimeter	4.0, 7.0	
8/12/2018	7.1	Multimeter	4.0, 7.0	
8/13/2018	7.21	Multimeter	4.0, 7.0	
8/14/2018	6.61	Multimeter	4.0, 7.0	
8/15/2018	6.82	Multimeter	4.0, 7.0	
8/16/2018	6.66	Multimeter	4.0, 7.0	
8/17/2018	6.90	Multimeter	4.0, 7.0	
8/18/2018	6.76	Multimeter	4.0, 7.0	
8/19/2018	6.70	Multimeter	4.0, 7.0	
8/20/2018	7.22	Multimeter	4.0, 7.0	
8/21/2018	7.06	Multimeter	4.0, 7.0	
8/22/2018	6.46	Multimeter	4.0, 7.0	
8/23/2018	7.1	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
8/24/2018	6.84	Multimeter	4.0, 7.0	
8/25/2018	6.7	Multimeter	4.0, 7.0	
8/26/2018	6.5	Multimeter	4.0, 7.0	
8/27/2018	6.57	Multimeter	4.0, 7.0	
8/28/2018	6.55	Multimeter	4.0, 7.0	
8/29/2018	6.79	Multimeter	4.0, 7.0	
8/30/2018	6.30	Multimeter	4.0, 7.0	
8/31/2018	6.84	Multimeter	4.0, 7.0	
September 2018				
9/1/2018	6.47	Multimeter	4.0, 7.0	
9/2/2018	6.65	Multimeter	4.0, 7.0	
9/3/2018	7.33	Multimeter	4.0, 7.0	
9/4/2018	6.82	Multimeter	4.0, 7.0	
9/5/2018	7.17	Multimeter	4.0, 7.0	
9/6/2018	6.88	Multimeter	4.0, 7.0	
9/7/2018	7.03	Multimeter	4.0, 7.0	
9/8/2018	6.62	Multimeter	4.0, 7.0	
9/9/2018	6.49	Multimeter	4.0, 7.0	
9/10/2018	6.57	Multimeter	4.0, 7.0	
9/11/2018	6.69	Multimeter	4.0, 7.0	
9/12/2018	6.91	Multimeter	4.0, 7.0	
9/13/2018	6.95	Multimeter	4.0, 7.0	
9/14/2018	7.55	Multimeter	4.0, 7.0	
9/15/2018	7.3	Multimeter	4.0, 7.0	
9/16/2018	6.85	Multimeter	4.0, 7.0	
9/17/2018	6.49	Multimeter	4.0, 7.0	
9/18/2018	6.62	Multimeter	4.0, 7.0	
9/19/2018	6.42	Multimeter	4.0, 7.0	
9/20/2018	6.55	Multimeter	4.0, 7.0	
9/21/2018	6.53	Multimeter	4.0, 7.0	
9/22/2018	6.67	Multimeter	4.0, 7.0	
9/23/2018	7.02	Multimeter	4.0, 7.0	
9/24/2018	6.70	Multimeter	4.0, 7.0	
9/25/2018	7.04	Multimeter	4.0, 7.0	
9/26/2018	7.40	Multimeter	4.0, 7.0	

Table A-6. pH Measurement Results, January-December 2018

Charlie Burch Pits Site, Spring, Texas

Date	Measured Discharge pH	Analyst	Calibration Standards	Notes
9/27/2018	6.96	Multimeter	4.0, 7.0	
9/28/2018	6.54	Multimeter	4.0, 7.0	
9/29/2018	6.98	Multimeter	4.0, 7.0	
9/30/2018	6.50	Multimeter	4.0, 7.0	
October 2018				
10/1/2018	6.32	Multimeter	4.0, 7.0	
10/2/2018	6.48	Multimeter	4.0, 7.0	
10/3/2018	7.03	Multimeter	4.0, 7.0	
10/4/2018	6.56	Multimeter	4.0, 7.0	
10/5/2018	6.49	Multimeter	4.0, 7.0	
10/6/2018	6.74	Multimeter	4.0, 7.0	
10/7/2018	6.39	Multimeter	4.0, 7.0	
10/8/2018	6.42	Multimeter	4.0, 7.0	
10/9/2018	6.33	Multimeter	4.0, 7.0	
10/10/2018	6.54	Multimeter	4.0, 7.0	
10/11/2018	7.35	Multimeter	4.0, 7.0	
10/12/2018	6.32	Multimeter	4.0, 7.0	
10/13/2018	6.48	Multimeter	4.0, 7.0	
10/14/2018	7.03	Multimeter	4.0, 7.0	
10/15/2018	6.56	Multimeter	4.0, 7.0	
10/16/2018	6.49	Multimeter	4.0, 7.0	
10/17/2018	6.74	Multimeter	4.0, 7.0	Approval by TCEQ to sample pH bi-weekly
10/31/2018	7.17	Multimeter	4.0, 7.0	
November 2018				
11/13/2018	7.31	Multimeter	4.0, 7.0	
11/28/2018	7.69	Multimeter	4.0, 7.0	
December 2018				
12/12/2018	7.28	Multimeter	4.0, 7.0	
12/21/2018	7.14	Multimeter	4.0, 7.0	

Table A-7. Well Sampling Results Summary: Annual Site Visit

Charlie Burch Pits Site, Spring, Texas

Well Type/ID	*1,2- Dichloroethane*	Sample Date
Recovery Wells	**Units**	**10/16/18**
RW-CB-2R	mg/L	**0.0142**
RW-CB-3R	mg/L	**0.0473**
RW-CB-3D	mg/L	**0.0133**
RW-CB-4R	mg/L	**0.0587**
RW-CB-5R	mg/L	**0.0250**

Notes:

Groundwater samples collected at the locations shown on Figure A.1.

Samples analyzed in accordance with U.S. EPA Methods 8260 (volatile organic compounds) by SGS Accutest Laboratories, Houston, Texas.

mg/l= Milligrams per liter

Bold type indicates an analyte detection greater than the method detection limit (MDL).

Figure

Legend

A & AS = Screen less than 40 ft depth
AD = Screen greater than 40 ft depth
MW = Monitoring well
OW = Flood channel observation well
RW = Recovery well
TP = Temporary piezometer completed as monitoring well
TRW = Trench Recovery Well
PMW = Performance Monitoring Well
PZ = Peizometer
EAB = Enhanced Anaerobic Bioremediation

Monitoring Well Location (Zone B)

B = Screen greater than 85 ft depth
BS = Screen 70 to 85 ft depth

Performance Monitoring Well
Recovery Well (Zone A)
Monitoring Well Location (Zone A)
Former Landfill Area
Waste Material Removed Summer 1999, Replaced with Clean Backfill
Site Boundary
Brine Disposal Piping
Electrical Line
HDPE Pipe
Outfall Discharge
Stormwater Ditch

0 40 80
Feet

Figure A.1
Site Location and Site Plan
Charlie Burch Site
Spring, Texas

Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
Rohn and Haas Texas Inc., VCP No. 421

N

Drawing Date: February 2019

Drawn By:

JACOBS

R:\ENBG\00_PROJ\D\DOW_CHEMICAL\CHARLIEBURCH\MAPS\REPORT\UTILITIES_NORTH.MXD GTWIGG 2/28/2019

Attachment A-1
(See Attached CD)

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH EFFLUENT

SGS Job Number: TD15025

Sampling Date: 01/12/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: 20

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-17-27) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Sample Summary

GSI

Job No: TD15025

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH EFFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD15025-1	01/12/18	10:20		01/12/18	AQ	Water	BURCH EFFLUENT
TD15025-2	01/12/18	00:00		01/12/18	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD15025

Site: Charlie Burch Site **Report Date** 1/23/2018 5:04:40 PM

1 Sample was collected on 01/12/2018 and received intact at Accutest on 01/12/2018 and properly preserved in 1 cooler at 0.6 Deg C. The sample received an Accutest job number of TD15025. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VG2605

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45388

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD15025
Account: GSI
Project: Charlie Burch Site
Collected: 01/12/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD15025-1	**BURCH EFFLUENT**					
1,2-Dichloroethane		0.00034 J	0.0010	0.00030	mg/l	SW846 8260C
TD15025-2	**TRIP BLANK**					
Acetone		0.0106 J	0.050	0.010	mg/l	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD15025-1	**Date Sampled:**	01/12/18
Matrix:	AQ - Water	**Date Received:**	01/12/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0279540.D	1	01/18/18 11:35	FI	n/a	n/a	VG2605
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00034	0.0010	0.00030	mg/l	J
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD15025-1	**Date Sampled:**	01/12/18
Matrix:	AQ - Water	**Date Received:**	01/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P51607.D	1	01/22/18 13:14	GJ	01/19/18 12:35	OP45388	EP2495
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	ND	0.0051	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0051	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	64%		32-128%
4165-60-0	Nitrobenzene-d5	68%		29-115%
321-60-8	2-Fluorobiphenyl	69%		34-113%
1718-51-0	Terphenyl-d14	75%		23-138%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	TD15025-2	**Date Sampled:**	01/12/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	01/12/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0279538.D	1	01/18/18 10:46	FI	n/a	n/a	VG2605
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	0.0106	0.050	0.010	mg/l	J
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: TD15025

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston State: TX Zip: 77098
Project Contact: Jim McDade E-mail: jtmmcdade@gsi-net.com
Phone #: 713-522-6300 Fax #:
Sampler(s) Name(s): Phone #: 7135226300

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring State: TX
Project #: G-4544-101
Client Purchase Order #:
Project Manager: Jim McDade

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List	LAB USE ONLY
1	Burch Effluent	11/12/18	1020	GG	WW	5	X					X							X	X	
2	Trip Blank	-	-	-	WW	2													X		

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:
1		11/12/2018 1120	1
2	Relinquished By:	Date Time:	Received By: 2
3	Relinquished by Sampler:	Date Time:	Received By: 3
4	Relinquished By:	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5

Custody Seal # [ ] Intact [ ] Not intact
Preserved where applicable [ ] On Ice [ ] Cooler Temp: 0.6

TD15025: Chain of Custody
Page 1 of 4

ACCUTEST

COOLER TEMP FORM

TC# TD15025

Delivered by (circle one): FedEx/UPS ABC Driver Client

Date: 11/2/18

Client: GSI

Cooler Number: 1

Thermometer ID: IR9 CF, °C 0 Corrected Temp, °C 0.4

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1

5

TD15025: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD15025 **Client:** GSI **Project:** CHARLIE BURCH

Date / Time Received: 1/12/2018 11:20:00 AM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (0.6/0.6);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD15025 **Date / Time Received:** 1/12/2018 11:20:00 AM 11:2 **Initials:** BG

Client: GSI

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD15025-1	LAG	1	4BB	N/P	Note #2 - Preservative check not applicable.	IR9	0.6	0	0.6
1	TD15025-1	LAG	2	4BB	N/P	Note #2 - Preservative check not applicable.	IR9	0.6	0	0.6
1	TD15025-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	0.6	0	0.6
1	TD15025-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	0.6	0	0.6
1	TD15025-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	0.6	0	0.6
	TD15025-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD15025-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

TD15025: Chain of Custody
Page 4 of 4

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD15025
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2605-MB	G0279535.D	1	01/18/18	FI	n/a	n/a	VG2605

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD15025-1, TD15025-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD15025
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2605-BS	G0279532.D	1	01/18/18	FI	n/a	n/a	VG2605
VG2605-BSD [a]	G0279533.D	1	01/18/18	FI	n/a	n/a	VG2605

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD15025-1, TD15025-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	125	112	90	103	82	8	46-129/30
71-43-2	Benzene	25	21.4	86	20.6	82	4	68-119/30
107-06-2	1,2-Dichloroethane	25	21.4	86	20.6	82	4	68-121/30
100-41-4	Ethylbenzene	25	22.9	92	22.3	89	3	71-117/30
97-63-2	Ethyl methacrylate	25	23.0	92	22.4	90	3	59-118/30
78-83-1	Isobutyl alcohol	250	240	96	225	90	6	22-162/30
80-62-6	Methyl methacrylate	25	21.1	84	20.7	83	2	53-135/30
78-93-3	Methyl ethyl ketone	125	118	94	115	92	3	51-129/30
108-88-3	Toluene	25	21.7	87	21.2	85	2	73-119/30
1330-20-7	Xylene (total)	75	69.6	93	67.3	90	3	74-119/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	101%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	98%	68-124%
2037-26-5	Toluene-D8	102%	101%	80-119%
460-00-4	4-Bromofluorobenzene	99%	100%	72-126%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD15025
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45388-MB	P51601A.D	1	01/22/18	GJ	01/19/18	OP45388	EP2495

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD15025-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	29%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	75%	32-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD15025
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45388-BS	P51602A.D	1	01/22/18	GJ	01/19/18	OP45388	EP2495
OP45388-BSD [a]	P51603A.D	1	01/22/18	GJ	01/19/18	OP45388	EP2495

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD15025-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	35.5	71	36.7	73	3	39-107/30
95-48-7	2-Methylphenol	50	25.7	51	27.3	55	6	33-93/30
	3&4-Methylphenol	50	23.7	47	24.8	50	5	28-99/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	31%	32%	10-66%
4165-62-2	Phenol-d5	22%	22%	10-63%
118-79-6	2,4,6-Tribromophenol	69%	71%	32-128%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH EFFLUENT

SGS Job Number: TD15689

Sampling Date: 01/26/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: **20**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-28) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

GSI

Job No: TD15689

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH EFFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD15689-1	01/26/18	09:08		01/26/18	AQ	Water	BURCH EFFLUENT

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD15689

Site: Charlie Burch Site **Report Date** 3/3/2018 12:41:13 AM

1 Sample was collected on 01/26/2018 and received intact at SGS North America Inc (SGS) on 01/26/2018 and properly preserved in 1 cooler at 3.8 Deg C. The sample received an Accutest job number of TD15689. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5593

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD16015-2MS, TD16015-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD for MSD for 1,2-Dichloroethane is outside control limits for sample TD16015-2MSD.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45468

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD15689
Account: GSI
Project: Charlie Burch Site
Collected: 01/26/18

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD15689-1	**BURCH EFFLUENT**					
Acetone		0.0144 J	0.050	0.010	mg/l	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD15689-1	**Date Sampled:**	01/26/18
Matrix:	AQ - Water	**Date Received:**	01/26/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z62811.D	1	02/05/18 16:54	EM	n/a	n/a	VZ5593
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	0.0144	0.050	0.010	mg/l	J
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD15689-1	**Date Sampled:**	01/26/18
Matrix:	AQ - Water	**Date Received:**	01/26/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J190278.D	1	02/20/18 15:05	ZT	02/02/18 08:30	OP45468	EJ2690
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	ND	0.0051	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0051	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	28%		10-66%
4165-62-2	Phenol-d5	23%		10-63%
118-79-6	2,4,6-Tribromophenol	58%		32-128%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: TD15689

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston | State: TX | Zip: 77098
Project Contact: Jim McDade | E-mail: jmmcdade@gsi-net.com
Phone #: 713-522-6300 | Fax #:
Sampler(s) Name(s): KEM/DCK | Phone #:

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring | State: TX
Project #: G-4544-101
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: | State: | Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List
	Burch Effluent	1/26/18	0908	KEM/DCK	WW	5	X					X							X	X

TAGGED BY:
VERIFIED BY:

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

LAB USE ONLY

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:
1		1/26/18 1617	1
2	Relinquished By:	Date Time:	Received By: 2
3	Relinquished by Sampler:	Date Time:	Received By: 3
4	Relinquished By:	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5

Custody Seal #: [ ] Intact [ ] Not intact | Preserved where applicable: [ ] | On Ice: [X] | Cooler Temp: 5.6

5.1 5

TD15689: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# 170259

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 1/24/18

Client: GSI

Cooler Number: 1

Thermometer ID: IR5 CF, °C 0 Corrected Temp, °C 3.8

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1 5

TD15689: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD15689 **Client:** GSI ENVIRONMENTAL **Project:** CHARLIE BURCH SITE

Date / Time Received: 1/26/2018 4:17:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (3.8/3.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD15689 **Date / Time Received:** 1/26/2018 4:17:00 PM 4:17:0 **Initials:** BG

Client: GSI ENVIRONMENTAL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD15689-1	LAG	1	4CC	N/P	Note #2 - Preservative check not applicable.	IR9	3.8	0	3.8
1	TD15689-1	LAG	2	4CC	N/P	Note #2 - Preservative check not applicable.	IR9	3.8	0	3.8
1	TD15689-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	3.8	0	3.8
1	TD15689-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	3.8	0	3.8
1	TD15689-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	3.8	0	3.8

TD15689: Chain of Custody
Page 4 of 4

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD15689
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5593-MB	Z62798.D	1	02/05/18	EM	n/a	n/a	VZ5593

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD15689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Blank Spike Summary

Job Number: TD15689
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5593-BS	Z62796.D	1	02/05/18	EM	n/a	n/a	VZ5593

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD15689-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	136	109	46-129
71-43-2	Benzene	25	24.1	96	68-119
107-06-2	1,2-Dichloroethane	25	27.2	109	68-121
100-41-4	Ethylbenzene	25	27.3	109	71-117
97-63-2	Ethyl methacrylate	25	28.3	113	59-118
78-83-1	Isobutyl alcohol	250	281	112	22-162
80-62-6	Methyl methacrylate	25	27.8	111	53-135
78-93-3	Methyl ethyl ketone	125	149	119	51-129
108-88-3	Toluene	25	25.8	103	73-119
1330-20-7	Xylene (total)	75	82.9	111	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD15689
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD16015-2MS	Z62804.D	1	02/05/18	EM	n/a	n/a	VZ5593
TD16015-2MSD	Z62805.D	1	02/05/18	EM	n/a	n/a	VZ5593
TD16015-2	Z62803.D	1	02/05/18	EM	n/a	n/a	VZ5593

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD15689-1

CAS No.	Compound	TD16015-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	153	122	125	138	110	10	46-129/25
71-43-2	Benzene	1.0	U	25	26.5	106	25	24.3	97	9	68-119/12
107-06-2	1,2-Dichloroethane	1.0	U	25	29.8	119	25	25.9	104	14*	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	27.1	108	25	25.0	100	8	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	27.8	111	25	25.9	104	7	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	314	126	250	283	113	10	22-162/30
80-62-6	Methyl methacrylate	10	U	25	27.5	110	25	25.5	102	8	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	157	126	125	144	115	9	51-129/22
108-88-3	Toluene	1.0	U	25	26.3	105	25	24.3	97	8	73-119/13
1330-20-7	Xylene (total)	3.0	U	75	81.5	109	75	74.7	100	9	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD16015-2	Limits
1868-53-7	Dibromofluoromethane	110%	106%	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	113%	110%	113%	68-124%
2037-26-5	Toluene-D8	101%	101%	102%	80-119%
460-00-4	4-Bromofluorobenzene	103%	100%	103%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD15689
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45468-MB	J190285.D	1	02/20/18	ZT	02/02/18	OP45468	EJ2691

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD15689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	18%	10-66%
4165-62-2	Phenol-d5	12%	10-63%
118-79-6	2,4,6-Tribromophenol	47%	32-128%
4165-60-0	Nitrobenzene-d5	40%	29-115%
321-60-8	2-Fluorobiphenyl	38%	34-113%
1718-51-0	Terphenyl-d14	52%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD15689
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45468-BS	J190517.D	1	03/01/18	ZT	02/02/18	OP45468	EJ2700
OP45468-BSD	J190518.D	1	03/01/18	ZT	02/02/18	OP45468	EJ2700

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD15689-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	30.4	61	27.4	55	10	39-107/30
95-48-7	2-Methylphenol	50	23.8	48	23.3	47	2	33-93/30
	3&4-Methylphenol	50	24.3	49	23.6	47	3	28-99/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	26%	26%	10-66%
4165-62-2	Phenol-d5	18%	18%	10-63%
118-79-6	2,4,6-Tribromophenol	60%	59%	32-128%
4165-60-0	Nitrobenzene-d5	54%	50%	29-115%
321-60-8	2-Fluorobiphenyl	52%	47%	34-113%
1718-51-0	Terphenyl-d14	62%	58%	23-138%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

Charlie Burch (Parsons)

Influent / Effluent Samples

SGS Job Number: TD16391

Sampling Date: 02/08/18

Report to:

Parsons Corporation
1900 West Loop S. #400
Houston, TX 77027
Sandra.delasFuentes@parsons.com; daniel.r.griffiths@parsons.com;
brian.vanderglas@parsons.com; mark.delorimier@parsons.com;
ATTN: Sandra de las Fuentes

Total number of pages in report: 22

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-28) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Test results relate only to samples analyzed.

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD16391

Charlie Burch (Parsons)
Project No: Influent / Effluent Samples

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD16391-1	02/08/18	09:42		02/08/18	AQ	Water	BURCH EFFLUENT
TD16391-2	02/08/18	10:00		02/08/18	AQ	Water	BURCH INFLUENT
TD16391-3	02/08/18	10:15		02/08/18	AQ	Water	BURCH EFFLUENT FILTERED

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Dow Chemical Company	**Job No**	TD16391
Site:	Charlie Burch (Parsons)	**Report Date**	3/2/2018 5:14:00 PM

2 Samples were collected on 02/08/2018 and received intact at SGS North America Inc (SGS) Houston on 02/08/2018 and properly preserved in 1 cooler at 1.7 Deg C. The samples received an Accutest job number of TD16391. A listing of the Laboratory Sample ID, Client Sample ID, and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VK2166

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Methyl ethyl ketone are outside control limits.
- VK2166-BS for Methyl ethyl ketone: Outside control limits biased high. Analyte not detected in the associated samples.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45533

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Samples TD16390-5MS, TD16390-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD16391
Account: Dow Chemical Company
Project: Charlie Burch (Parsons)
Collected: 02/08/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD16391-1	**BURCH EFFLUENT**					
No hits reported in this sample.						
TD16391-2	**BURCH INFLUENT**					
1,2-Dichloroethane		0.0181	0.0010	0.00030	mg/l	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: BURCH EFFLUENT
Lab Sample ID: TD16391-1
Matrix: AQ - Water
Method: SW846 8260C
Project: Charlie Burch (Parsons)

Date Sampled: 02/08/18
Date Received: 02/08/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K358297.D	1	02/15/18 11:05	FI	n/a	n/a	VK2166
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD16391-1	**Date Sampled:**	02/08/18
Matrix:	AQ - Water	**Date Received:**	02/08/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch (Parsons)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J190356.D	1	02/22/18 19:37	ZT	02/12/18 09:00	OP45533	EJ2693
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	ND	0.0051	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0051	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	20%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	60%		32-128%
4165-60-0	Nitrobenzene-d5	57%		29-115%
321-60-8	2-Fluorobiphenyl	59%		34-113%
1718-51-0	Terphenyl-d14	65%		23-138%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH INFLUENT		
Lab Sample ID:	TD16391-2	**Date Sampled:**	02/08/18
Matrix:	AQ - Water	**Date Received:**	02/08/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch (Parsons)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K358298.D	1	02/15/18 11:29	FI	n/a	n/a	VK2166
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0181	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH INFLUENT		
Lab Sample ID:	TD16391-2	**Date Sampled:**	02/08/18
Matrix:	AQ - Water	**Date Received:**	02/08/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch (Parsons)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J190341.D	1	02/22/18 12:26	ZT	02/12/18 09:00	OP45533	EJ2693
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	ND	0.0051	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0051	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	18%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	61%		32-128%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # | Bottle Order Control # TD16391
Accutest Quote # | Accutest Job #

Client / Reporting Information

Company Name: Parsons Corporation
Street Address: 1900 West Loop S. #400
City: Houston State: TX Zip: 77027
Project Contact: Sandra de las Fuentes E-mail:
Phone #: 713-871-7000 Fax #:
Sampler(s) Name(s): Genevieve Grundy Phone #: 713 962 4300

Project Information

Project Name: Charlie Burch Site - Source Area
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Jim McDade

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Alkalinity, TDS, TSS on hold	Total Fe & Ca on hold	Dissolved Fe (Filter at Lab) on hold	Volatiles by 8260 (Special list)	Semivolatiles by 8270 (Special list)	LAB USE ONLY
1	Burch Effluent	2/8/18	0942	GH	GW	9	3			1		5							X	X	X	X	X	
2	Burch Influent	↓	1000	GH	GW	9	3			1		5							X	X	X	X	X	
3	Burch Effluent Filtered	↓	1015	GH	GW	4				1		3							X	X	X			

TAGGED BY:

VERIFIED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

- Please send results to JMMcDade@gsi-net.com
- Alkalinity, TDS, TSS, Total Fe and Ca, Dissolved Fe ON HOLD

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	2/8/18 1610	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	[X] Intact [ ] Not intact	Preserved where applicable [X] On Ice [X] Cooler Temp. 2.7
5		5			

TD16391: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# TD16391

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 2-8-18

Client: Parsons Corporation

Cooler Number:

Thermometer ID: IR4 CF, °C 0.0 Corrected Temp, °C 1.7

SAMPLES CONTAINED IN COOLER

(2) LAG
(2) 1LLNP
1 (1) 500 NP Metals
2 (1) 250 SLB
(3) LLA

- 3 (2) 1LLNP
(1) 500 Metals NP
(1) 250 SLB

ACCUTEST
Client: GSI ENVIRONMETAL
Project: CHARLIE BURCH
Attn: GEN GRUNDY
Cooler: 1 of 1

CLIENT PICK UP

pH LOT# 10D4

SGS

Customer
2/8/18 1610
DATE
SIGNATURE

0969

TD16391: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD16391 **Client:** PARSONS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.7/1.7);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☑	☐	☐	☐
2. Trip Blank listed on COC:	☐		☑	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD16391 **Date / Time Received:** 2/8/2018 4:10:00 PM **Initials:** DS

Client: PARSONS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD16391-1	LAG	1	4MM	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-1	LAG	2	4MM	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-1	1000ml	3	3D	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-1	1000ml	4	3D	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-1	500ml	5	SUB	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-1	250ml	6	SUB	HNO3	pH < 2	IR-4	1.7	0	1.7
1	TD16391-1	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.7	0	1.7
1	TD16391-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.7	0	1.7
1	TD16391-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.7	0	1.7
1	TD16391-2	LAG	1	4MM	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-2	LAG	2	4MM	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-2	1000ml	3	3D	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-2	1000ml	4	3D	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-2	500ml	5	SUB	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-2	250ml	6	SUB	HNO3	pH < 2	IR-4	1.7	0	1.7
1	TD16391-2	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.7	0	1.7
1	TD16391-2	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.7	0	1.7
1	TD16391-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.7	0	1.7
1	TD16391-3	1000ml	1	3D	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-3	1000ml	2	3D	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-3	500ml	3	SUB	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD16391-3	250ml	4	SUB	HNO3	pH < 2	IR-4	1.7	0	1.7

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD16391
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK2166-MB	K358296.D	1	02/15/18	FI	n/a	n/a	VK2166

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD16391-1, TD16391-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	90%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD16391
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK2166-BS	K358291.D	1	02/15/18	FI	n/a	n/a	VK2166
VK2166-BSD	K358292.D	1	02/15/18	FI	n/a	n/a	VK2166

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD16391-1, TD16391-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	125	144	115	139	111	4	46-129/30
71-43-2	Benzene	25	24.0	96	23.2	93	3	68-119/30
107-06-2	1,2-Dichloroethane	25	24.7	99	24.0	96	3	68-121/30
100-41-4	Ethylbenzene	25	24.0	96	23.0	92	4	71-117/30
97-63-2	Ethyl methacrylate	25	23.2	93	22.4	90	4	59-118/30
78-83-1	Isobutyl alcohol	250	212	85	217	87	2	22-162/30
80-62-6	Methyl methacrylate	25	23.0	92	22.0	88	4	53-135/30
78-93-3	Methyl ethyl ketone	125	165	132* [a]	155	124	6	51-129/30
108-88-3	Toluene	25	23.1	92	22.2	89	4	73-119/30
1330-20-7	Xylene (total)	75	71.7	96	69.0	92	4	74-119/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	90%	90%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	100%	68-124%
2037-26-5	Toluene-D8	98%	98%	80-119%
460-00-4	4-Bromofluorobenzene	102%	101%	72-126%

(a) Outside control limits biased high. Analyte not detected in the associated samples.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD16391
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45533-MB	P52055.D	1	02/14/18	GJ	02/12/18	OP45533	EP2514

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD16391-1, TD16391-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	26%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	64%	32-128%
4165-60-0	Nitrobenzene-d5	69%	29-115%
321-60-8	2-Fluorobiphenyl	67%	34-113%
1718-51-0	Terphenyl-d14	75%	23-138%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Semi-Volatile		0	ug/l	

Blank Spike Summary

Job Number: TD16391
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45533-BS	P52056.D	1	02/14/18	GJ	02/12/18	OP45533	EP2514

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD16391-1, TD16391-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	32.4	65	39-107
95-48-7	2-Methylphenol	50	23.8	48	33-93
	3&4-Methylphenol	50	20.9	42	28-99

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	30%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	74%	32-128%
4165-60-0	Nitrobenzene-d5	73%	29-115%
321-60-8	2-Fluorobiphenyl	77%	34-113%
1718-51-0	Terphenyl-d14	76%	23-138%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD16391
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45533-MS	P52061.D	1	02/14/18	GJ	02/12/18	OP45533	EP2514
OP45533-MSD	P52062.D	1	02/14/18	GJ	02/12/18	OP45533	EP2514
TD16390-5	P52060.D	1	02/14/18	GJ	02/12/18	OP45533	EP2514

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD16391-1, TD16391-2

CAS No.	Compound	TD16390-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.1 U		51	32.3	63	50	33.1	66	2	39-107/32
95-48-7	2-Methylphenol	5.1 U		51	24.4	48	50	24.5	49	0	33-93/35
	3&4-Methylphenol	5.1 U		51	22.2	44	50	22.0	44	1	28-99/36

CAS No.	Surrogate Recoveries	MS	MSD	TD16390-5	Limits
367-12-4	2-Fluorophenol	31%	31%	19%	10-66%
4165-62-2	Phenol-d5	21%	21%	12%	10-63%
118-79-6	2,4,6-Tribromophenol	68%	76%	40%	32-128%
4165-60-0	Nitrobenzene-d5	68%	71%	47%	29-115%
321-60-8	2-Fluorobiphenyl	68%	74%	44%	34-113%
1718-51-0	Terphenyl-d14	70%	84%	47%	23-138%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH INFLUENT

SGS Job Number: TD17184

Sampling Date: 02/23/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: **21**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-28) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Test results relate only to samples analyzed.

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Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

GSI

Job No: TD17184

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH INFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD17184-1	02/23/18	11:40		02/23/18	AQ	Water	INFLUENT

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD17184

Site: Charlie Burch Site **Report Date** 3/9/2018 4:28:53 PM

1 Sample was collected on 02/23/2018 and received intact at SGS North America Inc (SGS) on 02/23/2018 and properly preserved in 1 cooler at 1.9 Deg C. The sample received an Accutest job number of TD17184. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5631

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD17501-3MS, TD17501-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45626

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD17058-2MS, TD17058-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD17184
Account: GSI
Project: Charlie Burch Site
Collected: 02/23/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD17184-1	**INFLUENT**					
1,2-Dichloroethane		0.0198	0.0010	0.00030	mg/l	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	TD17184-1	**Date Sampled:**	02/23/18
Matrix:	AQ - Water	**Date Received:**	02/23/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z63661.D	1	03/05/18 13:23	EM	n/a	n/a	VZ5631
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0198	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: INFLUENT
Lab Sample ID: TD17184-1
Matrix: AQ - Water
Method: SW846 8270D SW846 3510C
Project: Charlie Burch Site

Date Sampled: 02/23/18
Date Received: 02/23/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J190685.D	1	03/07/18 17:19	ZT	02/26/18 20:30	OP45626	EJ2707
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	ND	0.0051	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0051	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	19%		10-63%
118-79-6	2,4,6-Tribromophenol	45%		32-128%
4165-60-0	Nitrobenzene-d5	38%		29-115%
321-60-8	2-Fluorobiphenyl	35%		34-113%
1718-51-0	Terphenyl-d14	64%		23-138%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: TD17184

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston | State: TX | Zip: 77098
Project Contact: Jim McDade | E-mail: jmmcdade@gsi-net.com
Phone #: 713-522-6300 | Fax #:
Sampler(s) Name(s): [illegible] | Phone #: 713-522-[illegible]

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring | State: TX
Project #: G-4544-101
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: | State: | Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List
1	~~Burch Effluent~~ Influent	2/23/18	1140	KDM	WW	5	X					X							X	X

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

LAB USE ONLY

TAGGED BY: [illegible]

VERIFIED BY: [illegible]

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

Send results to:
JMMcDade@gsi-net.com

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:
1	[signature]	2/23/18 1409	[signature] 2/23/18 1409
2	Relinquished By:	Date Time:	Received By:
3	Relinquished By:	Date Time:	Received By:
4	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:

Custody Seal # | [ ] Intact [ ] Not intact | Preserved where applicable [ ] | On Ice [X] | Cooler Temp 1.9°C

5.1 5

ADSUITEST

COOLER TEMP FORM

TC# TD17184

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 2-22-18

Client:

Cooler Number: 1041

Thermometer ID: IR-9 CF, °C 0.0 Corrected Temp, °C 1.9

SAMPLES CONTAINED IN COOLER

pH Lot# 1004561

Form: SM027-06 Rev 10/24/2016

TD17184: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD17184 **Client:** GSI ENVIRONMENTAL **Project:** CHARLIE BURCH SITE

Date / Time Received: 2/23/2018 2:09:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.9/1.9);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐	☑	☐	☐	☐
2. Trip Blank listed on COC:	☐	☑	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

TD17184: Chain of Custody
Page 3 of 4

Sample Receipt Log

Job #: TD17184 **Date / Time Received:** 2/23/2018 2:09:00 PM 2:09:0 **Initials:** EC

Client: GSI ENVIRONMENTAL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD17184-1	LAG	1	4RR	N/P	Note #2 - Preservative check not applicable.	IR9	1.9	0	1.9
1	TD17184-1	LAG	2	4RR	N/P	Note #2 - Preservative check not applicable.	IR9	1.9	0	1.9
1	TD17184-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.9	0	1.9
1	TD17184-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.9	0	1.9
1	TD17184-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.9	0	1.9

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD17184
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5631-MB	Z63656.D	1	03/05/18	EM	n/a	n/a	VZ5631

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17184-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	95%	72-126%

Blank Spike Summary

Job Number: TD17184
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5631-BS	Z63654.D	1	03/05/18	EM	n/a	n/a	VZ5631

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17184-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	117	94	46-129
71-43-2	Benzene	25	24.9	100	68-119
107-06-2	1,2-Dichloroethane	25	25.1	100	68-121
100-41-4	Ethylbenzene	25	25.4	102	71-117
97-63-2	Ethyl methacrylate	25	24.0	96	59-118
78-83-1	Isobutyl alcohol	250	275	110	22-162
80-62-6	Methyl methacrylate	25	22.1	88	53-135
78-93-3	Methyl ethyl ketone	125	113	90	51-129
108-88-3	Toluene	25	25.2	101	73-119
1330-20-7	Xylene (total)	75	76.7	102	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD17184
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD17501-3MS	Z63659.D	1	03/05/18	EM	n/a	n/a	VZ5631
TD17501-3MSD	Z63660.D	1	03/05/18	EM	n/a	n/a	VZ5631
TD17501-3	Z63657.D	1	03/05/18	EM	n/a	n/a	VZ5631

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17184-1

CAS No.	Compound	TD17501-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	134	107	125	139	111	4	46-129/25
71-43-2	Benzene	1.0	U	25	24.9	100	25	24.8	99	0	68-119/12
107-06-2	1,2-Dichloroethane	1.0	U	25	24.3	97	25	24.0	96	1	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	25.0	100	25	24.4	98	2	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	26.6	106	25	25.4	102	5	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	286	114	250	294	118	3	22-162/30
80-62-6	Methyl methacrylate	10	U	25	26.1	104	25	24.4	98	7	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	142	114	125	137	110	4	51-129/22
108-88-3	Toluene	1.0	U	25	25.0	100	25	24.4	98	2	73-119/13
1330-20-7	Xylene (total)	3.0	U	75	75.2	100	75	74.4	99	1	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD17501-3	Limits
1868-53-7	Dibromofluoromethane	98%	102%	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	101%	103%	68-124%
2037-26-5	Toluene-D8	99%	99%	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	101%	97%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD17184
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45626-MB	J190668.D	1	03/07/18	ZT	02/26/18	OP45626	EJ2707

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17184-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	32%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	84%	32-128%
4165-60-0	Nitrobenzene-d5	78%	29-115%
321-60-8	2-Fluorobiphenyl	84%	34-113%
1718-51-0	Terphenyl-d14	90%	23-138%

Blank Spike Summary

Job Number: TD17184
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45626-BS	J190641.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17184-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	31.9	64	39-107
95-48-7	2-Methylphenol	50	25.8	52	33-93
	3&4-Methylphenol	50	24.1	48	28-99

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	30%	10-66%
4165-62-2	Phenol-d5	21%	10-63%
118-79-6	2,4,6-Tribromophenol	68%	32-128%
4165-60-0	Nitrobenzene-d5	66%	29-115%
321-60-8	2-Fluorobiphenyl	70%	34-113%
1718-51-0	Terphenyl-d14	78%	23-138%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD17184
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45626-MS	J190643.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705
OP45626-MSD	J190644.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705
TD17058-2	J190642.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17184-1

CAS No.	Compound	TD17058-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.1 U		51	36.0	71	51	33.0	65	9	39-107/32
95-48-7	2-Methylphenol	5.1 U		51	29.9	59	51	28.1	55	6	33-93/35
	3&4-Methylphenol	5.1 U		51	27.7	54	51	25.1	49	10	28-99/36

CAS No.	Surrogate Recoveries	MS	MSD	TD17058-2	Limits
367-12-4	2-Fluorophenol	32%	31%	23%	10-66%
4165-62-2	Phenol-d5	23%	21%	17%	10-63%
118-79-6	2,4,6-Tribromophenol	72%	65%	58%	32-128%
4165-60-0	Nitrobenzene-d5	73%	67%	57%	29-115%
321-60-8	2-Fluorobiphenyl	75%	68%	60%	34-113%
1718-51-0	Terphenyl-d14	80%	72%	64%	23-138%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH EFFLUENT

SGS Job Number: TD17189

Sampling Date: 02/23/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: **21**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-28) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Test results relate only to samples analyzed.

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

GSI

Job No: TD17189

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH EFFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD17189-1	02/23/18	12:00		02/23/18	AQ	Water	EFFLUENT

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD17189

Site: Charlie Burch Site **Report Date** 3/9/2018 4:33:55 PM

1 Sample was collected on 02/23/2018 and received intact at SGS North America Inc (SGS) on 02/23/2018 and properly preserved in 1 cooler at 1.9 Deg C. The sample received an Accutest job number of TD17189. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VX3553

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45626

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD17058-2MS, TD17058-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD17189
Account: GSI
Project: Charlie Burch Site
Collected: 02/23/18

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD17189-1	**EFFLUENT**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	EFFLUENT		
Lab Sample ID:	TD17189-1	**Date Sampled:**	02/23/18
Matrix:	AQ - Water	**Date Received:**	02/23/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01244924.D	1	03/02/18 18:12	EM	n/a	n/a	VX3553
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EFFLUENT		
Lab Sample ID:	TD17189-1	**Date Sampled:**	02/23/18
Matrix:	AQ - Water	**Date Received:**	02/23/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J190686.D	1	03/07/18 17:48	ZT	02/26/18 20:30	OP45626	EJ2707
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	ND	0.0051	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0051	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-66%
4165-62-2	Phenol-d5	23%		10-63%
118-79-6	2,4,6-Tribromophenol	50%		32-128%
4165-60-0	Nitrobenzene-d5	47%		29-115%
321-60-8	2-Fluorobiphenyl	41%		34-113%
1718-51-0	Terphenyl-d14	68%		23-138%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # | Bottle Order Control #

Accutest Quote # | Accutest Job # TD17189

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston | State: TX | Zip: 77098
Project Contact: Jim McDade | E-mail: jmmcdade@gsi-net.com
Phone #: 713-522-6300 | Fax #:
Sampler(s) Name(s): Genevieve Gurley | Phone #: 713-522-6300

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring | State: TX
Project #: G-4544-101
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City | State | Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List
1	~~Burch~~ Effluent	2/23/15	1200	MM	WW	5	X					X							X	X

TAGGED BY: GG

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

LAB USE ONLY

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

send results to: JMMcDade@gsi-net.com

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		2/23/15 1409	1	2		2
3			3	4		4
5			5			

Custody Seal # | [ ] Intact [ ] Not intact | Preserved where applicable [ ] | On Ice [ ] | Cooler Temp.

5.1 5

SGS ACCUTEST

COOLER TEMP FORM

TC# TD17186

Delivered by (circle one): FedEx/UPS ALGC Driver (Client — circled)

Date: 2-23-18

Client:

Cooler Number: 1061

Thermometer ID: IR-9 CF, °C 0.0 Corrected Temp, °C 1.9

SAMPLES CONTAINED IN COOLER

Extra 500ml (H2SO4 — phosphate

Not on COC

pH LOT# 10D4561

Form: SM027-06 Rev 10/24/2016

SGS Sample Receipt Summary

Job Number: TD17189 **Client:** GSI ENVIRONMENTAL **Project:** CHARLIE BURCH SITE

Date / Time Received: 2/23/2018 2:09:00 PM **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.9/1.9);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐	☑	☐	☐	☐
2. Trip Blank listed on COC:	☐	☑	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☑	☐	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments Received 1 extra 500 ml container for phosphate. Not on COC.

Problem Resolution

Job Number: TD17189

CSR: Elessa Sommers **Response Date:** 3/6/2018

Response: Phosphorous not requested for this job.

Sample Receipt Log

Job #: TD17189 **Date / Time Received:** 2/23/2018 2:09:00 PM **Initials:** EC

Client: GSI ENVIRONMENTAL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD17189-1	LAG	1	4RR	N/P	Note #2 - Preservative check not applicable.	IR9	1.9	0	1.9
1	TD17189-1	LAG	2	4RR	N/P	Note #2 - Preservative check not applicable.	IR9	1.9	0	1.9
1	TD17189-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.9	0	1.9
1	TD17189-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.9	0	1.9
1	TD17189-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.9	0	1.9
1	TD17189-1	500ml	6	1N	H2SO4	pH < 2	IR9	1.9	0	1.9

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD17189
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3553-MB	X01244909.D	1	03/02/18	EM	n/a	n/a	VX3553

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17189-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	108%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD17189
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3553-BS	X01244905.D	1	03/02/18	EM	n/a	n/a	VX3553
VX3553-BSD [a]	X01244913.D	1	03/02/18	EM	n/a	n/a	VX3553

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17189-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	125	94.5	76	93.7	75	1	46-129/30
71-43-2	Benzene	25	19.3	77	19.0	76	2	68-119/30
107-06-2	1,2-Dichloroethane	25	20.0	80	20.3	81	1	68-121/30
100-41-4	Ethylbenzene	25	21.5	86	22.0	88	2	71-117/30
97-63-2	Ethyl methacrylate	25	20.4	82	20.0	80	2	59-118/30
78-83-1	Isobutyl alcohol	250	181	72	178	71	2	22-162/30
80-62-6	Methyl methacrylate	25	18.9	76	18.4	74	3	53-135/30
78-93-3	Methyl ethyl ketone	125	96.9	78	108	86	11	51-129/30
108-88-3	Toluene	25	19.7	79	19.7	79	0	73-119/30
1330-20-7	Xylene (total)	75	67.0	89	68.2	91	2	74-119/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	98%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	103%	68-124%
2037-26-5	Toluene-D8	102%	103%	80-119%
460-00-4	4-Bromofluorobenzene	98%	98%	72-126%

(a) AZ:Q9

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD17189
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45626-MB	J190668.D	1	03/07/18	ZT	02/26/18	OP45626	EJ2707

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17189-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	32%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	84%	32-128%
4165-60-0	Nitrobenzene-d5	78%	29-115%
321-60-8	2-Fluorobiphenyl	84%	34-113%
1718-51-0	Terphenyl-d14	90%	23-138%

Blank Spike Summary

Job Number: TD17189
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45626-BS	J190641.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17189-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	31.9	64	39-107
95-48-7	2-Methylphenol	50	25.8	52	33-93
	3&4-Methylphenol	50	24.1	48	28-99

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	30%	10-66%
4165-62-2	Phenol-d5	21%	10-63%
118-79-6	2,4,6-Tribromophenol	68%	32-128%
4165-60-0	Nitrobenzene-d5	66%	29-115%
321-60-8	2-Fluorobiphenyl	70%	34-113%
1718-51-0	Terphenyl-d14	78%	23-138%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD17189
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45626-MS	J190643.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705
OP45626-MSD	J190644.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705
TD17058-2	J190642.D	1	03/05/18	ZT	02/26/18	OP45626	EJ2705

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17189-1

CAS No.	Compound	TD17058-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.1	U	51	36.0	71	51	33.0	65	9	39-107/32
95-48-7	2-Methylphenol	5.1	U	51	29.9	59	51	28.1	55	6	33-93/35
	3&4-Methylphenol	5.1	U	51	27.7	54	51	25.1	49	10	28-99/36

CAS No.	Surrogate Recoveries	MS	MSD	TD17058-2	Limits
367-12-4	2-Fluorophenol	32%	31%	23%	10-66%
4165-62-2	Phenol-d5	23%	21%	17%	10-63%
118-79-6	2,4,6-Tribromophenol	72%	65%	58%	32-128%
4165-60-0	Nitrobenzene-d5	73%	67%	57%	29-115%
321-60-8	2-Fluorobiphenyl	75%	68%	60%	34-113%
1718-51-0	Terphenyl-d14	80%	72%	64%	23-138%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH EFFLUENT

SGS Job Number: TD17906

Sampling Date: 03/09/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: **20**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-28) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

GSI

Job No: TD17906

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH EFFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD17906-1	03/09/18	08:50		03/09/18	AQ	Water	BURCH EFFLUENT

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD17906

Site: Charlie Burch Site **Report Date** 3/19/2018 4:42:54 PM

1 Sample was collected on 03/09/2018 and received intact at SGS North America Inc (SGS) on 03/09/2018 and properly preserved in 1 cooler at 1.3 Deg C. The sample received an Accutest job number of TD17906. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE2931

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD17929-3MS, TD17929-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45702

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD17906
Account: GSI
Project: Charlie Burch Site
Collected: 03/09/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD17906-1	**BURCH EFFLUENT**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD17906-1	**Date Sampled:**	03/09/18
Matrix:	AQ - Water	**Date Received:**	03/09/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0066016.D	1	03/14/18 15:33	ZQ	n/a	n/a	VE2931
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD17906-1	**Date Sampled:**	03/09/18
Matrix:	AQ - Water	**Date Received:**	03/09/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P52557.D	1	03/14/18 12:53	GJ	03/12/18 15:00	OP45702	EP2538
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0050	0.0010	mg/l	
95-48-7	2-Methylphenol	ND	0.0050	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0050	0.0015	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		10-66%
4165-62-2	Phenol-d5	28%		10-63%
118-79-6	2,4,6-Tribromophenol	78%		32-128%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # TD17906

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston State: TX Zip: 77098
Project Contact: Jim McDade E-mail: jimmcdade@gsi-net.com
Phone #: 713-522-6300 Fax #:
Sampler(s) Name(s): Phone #:

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring State: TX
Project #: G-4544-101
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List	LAB USE ONLY
1	Burch Effluent	9/3/18	0850	DCK	WW	5	X					X							X	X	

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	3/9/18 1043	1 [signature] 1043 3/9/18	2		2
3		3	4		4
5		5	Custody Seal # ☑ Intact ☐ Not intact	Preserved where applicable ☑	On Ice ☑ Cooler Temp. 3

5.1

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TD17906: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# TD17906

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 3-9-18

Client: GSI

Cooler Number:

Thermometer ID: IR-4 CF, °C 0.0 Corrected Temp, °C 1.3

SAMPLES CONTAINED IN COOLER

FRIDAY 3/9

ACCUTEST GSI

Client:

Project: CHARLIE BURCH GEN GRUNDY

Attn:

Cooler: 6 of 6

Customer

DATE 3/9/18

SIGNATURE

093286

SGS

TD17906: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD17906 **Client:** GSI **Project:** CHARLIE BURCH SITE

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.3/1.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☑	☐	☐	☐
2. Trip Blank listed on COC:	☐		☑	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD17906 **Date / Time Received:** 3/9/2018 10:43:00 AM **Initials:** ds

Client: GSI

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD17906-1	LAG	1	4SS	N/P	Note #2 - Preservative check not applicable.	IR-4	1.3	0	1.3
1	TD17906-1	LAG	2	4SS	N/P	Note #2 - Preservative check not applicable.	IR-4	1.3	0	1.3
1	TD17906-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.3	0	1.3
1	TD17906-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.3	0	1.3
1	TD17906-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	1.3	0	1.3

TD17906: Chain of Custody
Page 4 of 4

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD17906
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE2931-MB	E0066008.D	1	03/14/18	ZQ	n/a	n/a	VE2931

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17906-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	92%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

Blank Spike Summary

Job Number: TD17906
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE2931-BS	E0066006.D	1	03/14/18	ZQ	n/a	n/a	VE2931

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17906-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	115	92	46-129
71-43-2	Benzene	25	23.6	94	68-119
107-06-2	1,2-Dichloroethane	25	21.8	87	68-121
100-41-4	Ethylbenzene	25	23.7	95	71-117
97-63-2	Ethyl methacrylate	25	27.1	108	59-118
78-83-1	Isobutyl alcohol	250	237	95	22-162
80-62-6	Methyl methacrylate	25	25.3	101	53-135
78-93-3	Methyl ethyl ketone	125	119	95	51-129
108-88-3	Toluene	25	23.4	94	73-119
1330-20-7	Xylene (total)	75	71.6	95	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	90%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	96%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD17906
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD17929-3MS	E0066010.D	5	03/14/18	ZQ	n/a	n/a	VE2931
TD17929-3MSD	E0066011.D	5	03/14/18	ZQ	n/a	n/a	VE2931
TD17929-3	E0066009.D	5	03/14/18	ZQ	n/a	n/a	VE2931

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD17906-1

CAS No.	Compound	TD17929-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	250	U	625	464	74	625	507	81	9	46-129/25
71-43-2	Benzene	5.0	U	125	110	88	125	112	90	2	68-119/12
107-06-2	1,2-Dichloroethane	5.0	U	125	104	83	125	105	84	1	68-121/12
100-41-4	Ethylbenzene	5.0	U	125	114	91	125	116	93	2	71-117/12
97-63-2	Ethyl methacrylate	50	U	125	117	94	125	117	94	0	59-118/19
78-83-1	Isobutyl alcohol	1000	U	1250	1000	80	1250	1070	86	7	22-162/30
80-62-6	Methyl methacrylate	50	U	125	106	85	125	106	85	0	53-135/21
78-93-3	Methyl ethyl ketone	50	U	625	545	87	625	533	85	2	51-129/22
108-88-3	Toluene	5.0	U	125	110	88	125	112	90	2	73-119/13
1330-20-7	Xylene (total)	15	U	375	342	91	375	347	93	1	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD17929-3	Limits
1868-53-7	Dibromofluoromethane	99%	98%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	93%	93%	68-124%
2037-26-5	Toluene-D8	100%	99%	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	99%	97%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD17906
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45702-MB	P52510A.D	1	03/12/18	GJ	03/12/18	OP45702	EP2536

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17906-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	27%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	80%	32-128%
4165-60-0	Nitrobenzene-d5	74%	29-115%
321-60-8	2-Fluorobiphenyl	75%	34-113%
1718-51-0	Terphenyl-d14	98%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD17906
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45702-BS	P52511A.D	1	03/12/18	GJ	03/12/18	OP45702	EP2536
OP45702-BSD [a]	P52512A.D	1	03/12/18	GJ	03/12/18	OP45702	EP2536

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD17906-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	38.8	78	32.3	65	18	39-107/30
95-48-7	2-Methylphenol	50	28.2	56	23.0	46	20	33-93/30
	3&4-Methylphenol	50	25.3	51	21.0	42	19	28-99/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	36%	29%	10-66%
4165-62-2	Phenol-d5	24%	19%	10-63%
118-79-6	2,4,6-Tribromophenol	90%	75%	32-128%
4165-60-0	Nitrobenzene-d5	85%	71%	29-115%
321-60-8	2-Fluorobiphenyl	89%	74%	34-113%
1718-51-0	Terphenyl-d14	98%	78%	23-138%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH EFFLUENT

SGS Job Number: TD18529

Sampling Date: 03/22/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: **20**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-28) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Sample Summary

GSI

Job No: TD18529

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH EFFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD18529-1	03/22/18	13:20		03/22/18	AQ	Water	BURCH EFFLUENT

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD18529

Site: Charlie Burch Site **Report Date** 4/3/2018 5:22:09 PM

1 Sample was collected on 03/22/2018 and received intact at SGS North America Inc (SGS) on 03/22/2018 and properly preserved in 1 cooler at 5.8 Deg C. The sample received an Accutest job number of TD18529. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VK2219

- All samples were analyzed within the recommended method holding time.
- Sample TD18834-3MS, TD18834-3MSD was used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45811

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD18529
Account: GSI
Project: Charlie Burch Site
Collected: 03/22/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD18529-1	**BURCH EFFLUENT**					
Methyl ethyl ketone		0.0122	0.010	0.0026	mg/l	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD18529-1	**Date Sampled:**	03/22/18
Matrix:	AQ - Water	**Date Received:**	03/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K359461.D	1	03/30/18 17:10	FI	n/a	n/a	VK2219
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0122	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0030	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	106%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD18529-1	**Date Sampled:**	03/22/18
Matrix:	AQ - Water	**Date Received:**	03/22/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O25132.D	1	03/31/18 00:52	GJ	03/27/18 13:30	OP45811	EO1408
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0050	0.0010	mg/l	
95-48-7	2-Methylphenol	ND	0.0050	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0050	0.0015	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	14%		10-66%
4165-62-2	Phenol-d5	10%		10-63%
118-79-6	2,4,6-Tribromophenol	46%		32-128%
4165-60-0	Nitrobenzene-d5	34%		29-115%
321-60-8	2-Fluorobiphenyl	35%		34-113%
1718-51-0	Terphenyl-d14	76%		23-138%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: TD18529

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston State: TX Zip: 77098
Project Contact: Jim McDade
E-mail: jmmcdade@gsi-net.com
Phone #: 713-522-6300
Fax #:
Sampler(s) Name(s): DCK
Phone #:

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring State: TX
Project #: G-4544-101
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List
1	Burch Effluent	3/22/18	1320	DCK	WW	5	X					X							X	X

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

LAB USE ONLY

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	DCK	3/22/18 1423	1	2		2
3			3	4		4
5			5			

Custody Seal #: [ ] Intact [ ] Not intact
Preserved where applicable
On Ice
Cooler Temp: 5.8

SGS ACCUTEST

COOLER TEMP FORM

TC# TD18529

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 3-22-18

Client: GSI

Cooler Number:

Thermometer ID: JA-4 CF, °C 0.0 Corrected Temp, °C 5.8

SAMPLES CONTAINED IN COOLER

(2) LAG
(3) ULA+HCL

SGS ACCUTEST GULF COAST CUSTODY SEAL
DATE/TIME SEALED 3/22/18 13:20
INITIALS DCK

Form: SM027-06 Rev 10/24/..

TD18529: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD18529 **Client:** GSI **Project:** CHARLIE BURCH SITE

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.8/5.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☑	☐	☐	☐
2. Trip Blank listed on COC:	☐		☑	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD18529 **Date / Time Received:** 3/22/2018 2:03:00 PM **Initials:** DS

Client: GSI

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD18529-1	LAG	1	4ZZ	N/P	Note #2 - Preservative check not applicable.	IR-4	5.8	0	5.8
1	TD18529-1	LAG	2	4ZZ	N/P	Note #2 - Preservative check not applicable.	IR-4	5.8	0	5.8
1	TD18529-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.8	0	5.8
1	TD18529-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.8	0	5.8
1	TD18529-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.8	0	5.8

TD18529: Chain of Custody
Page 4 of 4

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD18529
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK2219-MB	K359443.D	1	03/30/18	FI	n/a	n/a	VK2219

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD18529-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	105%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Blank Spike Summary

Job Number: TD18529
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK2219-BS	K359441.D	1	03/30/18	FI	n/a	n/a	VK2219

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD18529-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	101	81	46-129
71-43-2	Benzene	25	21.3	85	68-119
107-06-2	1,2-Dichloroethane	25	20.9	84	68-121
100-41-4	Ethylbenzene	25	23.0	92	71-117
97-63-2	Ethyl methacrylate	25	22.8	91	59-118
78-83-1	Isobutyl alcohol	250	203	81	22-162
80-62-6	Methyl methacrylate	25	22.0	88	53-135
78-93-3	Methyl ethyl ketone	125	94.8	76	51-129
108-88-3	Toluene	25	22.2	89	73-119
1330-20-7	Xylene (total)	75	68.8	92	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	106%	68-124%
2037-26-5	Toluene-D8	105%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD18529
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD18834-3MS	K359447.D	1	03/30/18	FI	n/a	n/a	VK2219
TD18834-3MSD	K359448.D	1	03/30/18	FI	n/a	n/a	VK2219
TD18834-3	K359446.D	1	03/30/18	FI	n/a	n/a	VK2219

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD18529-1

CAS No.	Compound	TD18834-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50 U		125	110	88	125	119	95	8	46-129/25
71-43-2	Benzene	1.0 U		25	21.5	86	25	22.6	90	5	68-119/12
107-06-2	1,2-Dichloroethane	43.6		25	62.5	76	25	67.2	94	7	68-121/12
100-41-4	Ethylbenzene	1.0 U		25	22.9	92	25	23.9	96	4	71-117/12
97-63-2	Ethyl methacrylate	10 U		25	24.4	98	25	25.8	103	6	59-118/19
78-83-1	Isobutyl alcohol	200 U		250	239	96	250	251	100	5	22-162/30
80-62-6	Methyl methacrylate	10 U		25	23.4	94	25	25.1	100	7	53-135/21
78-93-3	Methyl ethyl ketone	10 U		125	109	87	125	121	97	10	51-129/22
108-88-3	Toluene	1.0 U		25	22.7	91	25	23.7	95	4	73-119/13
1330-20-7	Xylene (total)	3.0 U		75	68.5	91	75	71.9	96	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD18834-3	Limits
1868-53-7	Dibromofluoromethane	101%	105%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	107%	108%	108%	68-124%
2037-26-5	Toluene-D8	106%	104%	105%	80-119%
460-00-4	4-Bromofluorobenzene	101%	101%	102%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD18529
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45811-MB	O25113.D	1	03/30/18	GJ	03/27/18	OP45811	EO1408

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD18529-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	21%	10-66%
4165-62-2	Phenol-d5	15%	10-63%
118-79-6	2,4,6-Tribromophenol	55%	32-128%
4165-60-0	Nitrobenzene-d5	53%	29-115%
321-60-8	2-Fluorobiphenyl	53%	34-113%
1718-51-0	Terphenyl-d14	74%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD18529
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45811-BS	O25114.D	1	03/30/18	GJ	03/27/18	OP45811	EO1408
OP45811-BSD [a]	O25115.D	1	03/30/18	GJ	03/27/18	OP45811	EO1408

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD18529-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	30.3	61	31.9	64	5	39-107/30
95-48-7	2-Methylphenol	50	21.9	44	23.0	46	5	33-93/30
	3&4-Methylphenol	50	21.4	43	22.2	44	4	28-99/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	26%	28%	10-66%
4165-62-2	Phenol-d5	19%	21%	10-63%
118-79-6	2,4,6-Tribromophenol	77%	83%	32-128%
4165-60-0	Nitrobenzene-d5	61%	65%	29-115%
321-60-8	2-Fluorobiphenyl	63%	65%	34-113%
1718-51-0	Terphenyl-d14	83%	87%	23-138%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

GSI

Charlie Burch Site

G-4544-101 / CHARLIE BURCH EFFLUENT

SGS Job Number: TD19284

Sampling Date: 04/06/18

Report to:

GSI
2211 Norfolk Drive Suite 1000
Houston, TX 77098
jmmcdade@gsi-net.com

ATTN: Jim McDade

Total number of pages in report: **20**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

GSI

Job No: TD19284

Charlie Burch Site
Project No: G-4544-101 / CHARLIE BURCH EFFLUENT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD19284-1	04/06/18	09:30		04/06/18	AQ	Water	BURCH EFFLUENT

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GSI **Job No** TD19284

Site: Charlie Burch Site **Report Date** 4/20/2018 4:09:08 PM

1 Sample was collected on 04/06/2018 and received intact at SGS North America Inc (SGS) on 04/06/2018 and properly preserved in 1 cooler at 5.2 Deg C. The sample received an Accutest job number of TD19284. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VX3602

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD19302-2MS, TD19302-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Ethyl methacrylate, Ethylbenzene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Ethylbenzene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike and Matrix Spike Duplicate Recovery(s) for Toluene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD for MSD for Isobutyl alcohol is outside control limits for sample TD19302-2MSD.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP45924

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD19284
Account: GSI
Project: Charlie Burch Site
Collected: 04/06/18

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD19284-1	**BURCH EFFLUENT**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD19284-1	**Date Sampled:**	04/06/18
Matrix:	AQ - Water	**Date Received:**	04/06/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01246071.D	1	04/13/18 21:12	SC	n/a	n/a	VX3602
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.050	0.010	mg/l	
71-43-2	Benzene	ND	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	ND	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	ND	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	ND	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	ND	0.010	0.0026	mg/l	
108-88-3	Toluene	ND	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	ND	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	91%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BURCH EFFLUENT		
Lab Sample ID:	TD19284-1	**Date Sampled:**	04/06/18
Matrix:	AQ - Water	**Date Received:**	04/06/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Charlie Burch Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J191347.D	1	04/13/18 14:08	ZT	04/12/18 10:30	OP45924	EJ2738
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.0050	0.0010	mg/l	
95-48-7	2-Methylphenol	ND	0.0050	0.0014	mg/l	
	3&4-Methylphenol	ND	0.0050	0.0015	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	15%		10-63%
118-79-6	2,4,6-Tribromophenol	72%		32-128%
4165-60-0	Nitrobenzene-d5	61%		29-115%
321-60-8	2-Fluorobiphenyl	60%		34-113%
1718-51-0	Terphenyl-d14	89%		23-138%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #

Bottle Order Control #

Accutest Quote #

Accutest Job # TD19284

Client / Reporting Information

Company Name: GSI Environmental
Street Address: 2211 Norfolk, Suite 1000
City: Houston State: TX Zip: 77098
Project Contact: Jim McDade E-mail: jmmcdade@gsi-net.com
Phone #: 713-522-6300 Fax #:
Sampler(s) Name(s): [illegible] Phone #: 7135226300

Project Information

Project Name: Charlie Burch Site
Street:
City: Spring State: TX
Project #: G-4544-101
Client Purchase Order #: 4544-101
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAc/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	* Volatiles by 8260B Selected List	** Semi-volatiles by 8270C Selected List
1.	Burch Effluent	4/16/18	0930	MW	WW	5	X					X							X	X

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

LAB USE ONLY

TAGGED BY: [illegible]

VERIFIED BY: [illegible]

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

* Acetone, Benzene, 1,2-DCA, MEK, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2-Methylphenol; 3&4-Methylphenol; 2,4-Dimethylphenol

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	4/16/18 1034	1 [signature] 4/16/18 1034	2		2
3		3	4		4
5		5			

Custody Seal # [ ] Intact [ ] Not Intact

Preserved where applicable [ ]

On Ice [X]

Cooler Temp. 5.2

5.1 5

TD19284: Chain of Custody
Page 1 of 4

ACCUTEST

COOLER TEMP FORM

TC# TD19284

Delivered by (circle one): FedEx/UPS ALGC Driver ~~Client~~

Date: 4/6/18

Client: GSL

Cooler Number: 1

Thermometer ID: IR5 CF, °C 0 Corrected Temp, °C 5.2

SAMPLES CONTAINED IN COOLER

SGS Customer

DATE 4/6/18

SIGNATURE

092541

Lot: 1052461

Form: SM027-06 Rev 10/24/2016

5.1

5

TD19284: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD19284 **Client:** GSI **Project:** CHARLIE BURCH SITE

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.2/5.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD19284 **Date / Time Received:** 4/6/2018 10:34:00 AM **Initials:** BG

Client: GSI

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD19284-1	LAG	1	4V	N/P	Note #2 - Preservative check not applicable.	IR9	5.2	0	5.2
1	TD19284-1	LAG	2	4V	N/P	Note #2 - Preservative check not applicable.	IR9	5.2	0	5.2
1	TD19284-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	5.2	0	5.2
1	TD19284-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	5.2	0	5.2
1	TD19284-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	5.2	0	5.2

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD19284
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3602-MB	X01246057.D	1	04/13/18	SC	n/a	n/a	VX3602

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19284-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	89%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Blank Spike Summary

Job Number: TD19284
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3602-BS	X01246059.D	1	04/13/18	SC	n/a	n/a	VX3602

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19284-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	123	98	46-129
71-43-2	Benzene	25	25.8	103	68-119
107-06-2	1,2-Dichloroethane	25	19.4	78	68-121
100-41-4	Ethylbenzene	25	25.6	102	71-117
97-63-2	Ethyl methacrylate	25	26.5	106	59-118
78-83-1	Isobutyl alcohol	250	307	123	22-162
80-62-6	Methyl methacrylate	25	27.3	109	53-135
78-93-3	Methyl ethyl ketone	125	149	119	51-129
108-88-3	Toluene	25	24.0	96	73-119
1330-20-7	Xylene (total)	75	77.7	104	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	88%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD19284
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD19302-2MS	X01246061.D	5	04/13/18	SC	n/a	n/a	VX3602
TD19302-2MSD	X01246062.D	5	04/13/18	SC	n/a	n/a	VX3602
TD19302-2 [a]	X01246060.D	5	04/13/18	SC	n/a	n/a	VX3602

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19284-1

CAS No.	Compound	TD19302-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	250 U		625	517	83	625	467	75	10	46-129/25
71-43-2	Benzene	5.0 U		125	126	101	125	122	98	3	68-119/12
107-06-2	1,2-Dichloroethane	5.0 U		125	95.4	76	125	93.2	75	2	68-121/12
100-41-4	Ethylbenzene	2.5	J	125	153	120*	125	151	119*	1	71-117/12
97-63-2	Ethyl methacrylate	50 U		125	150	120*	125	145	116	3	59-118/19
78-83-1	Isobutyl alcohol	1000 U		1250	1770	142	1250	1290	103	31*	22-162/30
80-62-6	Methyl methacrylate	50 U		125	142	114	125	138	110	3	53-135/21
78-93-3	Methyl ethyl ketone	50 U		625	796	127	625	740	118	7	51-129/22
108-88-3	Toluene	785		125	810	20* [b]	125	798	10* [b]	1	73-119/13
1330-20-7	Xylene (total)	5.0 U		375	460	123*	375	451	120*	2	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD19302-2	Limits
1868-53-7	Dibromofluoromethane	100%	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	84%	85%		68-124%
2037-26-5	Toluene-D8	102%	102%		80-119%
460-00-4	4-Bromofluorobenzene	105%	104%		72-126%

(a) Sample used for QC purposes only.
(b) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD19284
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45924-MB	J191337.D	1	04/13/18	ZT	04/12/18	OP45924	EJ2738

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD19284-1

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
	3&4-Methylphenol	ND	5.0	1.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	23%	10-66%
4165-62-2	Phenol-d5	14%	10-63%
118-79-6	2,4,6-Tribromophenol	65%	32-128%
4165-60-0	Nitrobenzene-d5	57%	29-115%
321-60-8	2-Fluorobiphenyl	64%	34-113%
1718-51-0	Terphenyl-d14	99%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD19284
Account: GSITXH GSI
Project: Charlie Burch Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45924-BS	J191346.D	1	04/13/18	ZT	04/12/18	OP45924	EJ2738
OP45924-BSD	J191339A.D	1	04/13/18	ZT	04/12/18	OP45924	EJ2738

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD19284-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	37.6	75	39.0	78	4	39-107/30
95-48-7	2-Methylphenol	25	14.8	59	15.3	61	3	33-93/30
	3&4-Methylphenol	75	37.4	50	38.9	52	4	28-99/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	35%	36%	10-66%
4165-62-2	Phenol-d5	22%	23%	10-63%
118-79-6	2,4,6-Tribromophenol	85%	86%	32-128%
4165-60-0	Nitrobenzene-d5	83%	84%	29-115%
321-60-8	2-Fluorobiphenyl	75%	73%	34-113%
1718-51-0	Terphenyl-d14	94%	90%	23-138%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

701411 / Charlie Burch OMA

SGS Job Number: TD19986

Sampling Date: 04/20/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: 27

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD19986

DOWMIM (Jacobs)
Project No: 701411 / Charlie Burch OMA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD19986-1	04/20/18	13:00		04/20/18	AQ	Ground Water	SA-E-20180420
TD19986-2	04/20/18	13:05		04/20/18	AQ	Ground Water	SA-I-20180420
TD19986-3	04/20/18	00:00		04/20/18	AQ	Trip Blank Water	TB-01-20180420

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD19986

Site: DOWMIM (Jacobs) **Report Date** 5/4/2018 6:23:32 PM

2 Samples and 1 Trip Blank were collected on 04/20/2018 and received intact at SGS North America Inc (SGS) on 04/20/2018 and properly preserved in 1 cooler at 3.6 Deg C. The samples received an Accutest job number of TD19986. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5702

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD20143-2MS, TD20143-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46012

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD19986
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 04/20/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD19986-1	**SA-E-20180420**					
Methyl ethyl ketone		0.0104	0.010	0.0026	mg/l	SW846 8260C
TD19986-2	**SA-I-20180420**					
1,2-Dichloroethane		0.0269	0.0010	0.00030	mg/l	SW846 8260C
TD19986-3	**TB-01-20180420**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180420		
Lab Sample ID:	TD19986-1	**Date Sampled:**	04/20/18
Matrix:	AQ - Ground Water	**Date Received:**	04/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z65198.D	1	04/27/18 09:29	EM	n/a	n/a	VZ5702
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0104	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180420		
Lab Sample ID:	TD19986-1	**Date Sampled:**	04/20/18
Matrix:	AQ - Ground Water	**Date Received:**	04/20/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J191536.D	1	04/25/18 11:25	ZT	04/24/18 06:45	OP46012	EJ2747
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0030 U	0.010	0.0030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	28%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	69%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180420		
Lab Sample ID:	TD19986-2	**Date Sampled:**	04/20/18
Matrix:	AQ - Ground Water	**Date Received:**	04/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z65199.D	1	04/27/18 09:53	EM	n/a	n/a	VZ5702
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0269	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	106%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180420		
Lab Sample ID:	TD19986-2	**Date Sampled:**	04/20/18
Matrix:	AQ - Ground Water	**Date Received:**	04/20/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J191537.D	1	04/25/18 11:54	ZT	04/24/18 06:45	OP46012	EJ2747
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

AE Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
	Cresol, Total	0.0030 U	0.010	0.0030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	21%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	56%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180420		
Lab Sample ID:	TD19986-3	**Date Sampled:**	04/20/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	04/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z65197.D	1	04/27/18 09:05	EM	n/a	n/a	VZ5702
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	95%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

TD19986

CHAIN OF CUSTODY

PAGE 1 of 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # Hand Delivered | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job #

Client / Reporting Information

Company Name : Jacobs
Street Address: 5985 Rogerdale Road, Tower II
City: Houston State: Texas Zip:77072
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-5927

Project Information

Project Name: Charlie Burch OMA
Street
City State
Project # 701411
Client Purchase Order #
Project Manager: Josh McFarlain (Jacobs)

Billing Information (if different from Report to)

Company Name: ~~Same as Client/reporting Information~~ Bill directly to
Street Address
City Dow State Zip
Attention:

Requested Analyses

Select VOCs (8260C):1,2-dichloroethane
2-butanone
acetone
benzene
toluene
ethylbenzene
xylenes
ethyl methacrylate
methyl methacrylate
isobutanol

Select SVOCs (8270D):2,4-dimethylphenol and total cresols

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge SED- Sediment OI - Oil
LIQ - Other Liquid AIR - Air
SOL - Other Solid WP - Wipe
FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TBP	NaHSO4	ENCORE	OTHER	Select VOCs (8260C)	Select SVOCs (8270D)
1	SA-E-20180420	4/20/2018	1300	MW	GW	5	3					2							X	X
2	SA-I-20180420	4/20/2018	1305	MW	GW	5	3					2							X	X
3	TB-01-20180420	4/20/2018	—	MW	GW	2	2												X	

LAB USE ONLY

Turnaround Time (Business days)
Standard

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary
TRRP
EDD Format
Other _____ REDT1 (Level 3+4)

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	4/20/18 1327	1	04/20/18 2 1327	04/20/18 2 1457	2 4/20/18 1457
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	✓Intact Not Intact	Preserved where applicable ✓	On Ice ✓	Cooler Temp. 3.6 C
5		5					

ACCUTEST

COOLER TEMP FORM

TC# TD19986

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 4/20/18

Client: JACOBS

Cooler Number: 1

Thermometer ID: TH5 CF, °C 0 Corrected Temp, °C 3.6

SAMPLES CONTAINED IN COOLER

094695

SGS Customer 04/20/18

DATE SIGNATURE

Form: SM027-06 Rev 10/24/2016

5.1 5

TD19986: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD19986 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 4/20/2018 2:52:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (3.6/3.6);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD19986 **Date / Time Received:** 4/20/2018 2:52:00 PM 2:52:0 **Initials:** BG

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD19986-1	LAG	1	4X	N/P	Note #2 - Preservative check not applicable.	IR-5	3.6	0	3.6
1	TD19986-1	LAG	2	4X	N/P	Note #2 - Preservative check not applicable.	IR-5	3.6	0	3.6
1	TD19986-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.6	0	3.6
1	TD19986-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.6	0	3.6
1	TD19986-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.6	0	3.6
1	TD19986-2	LAG	1	4X	N/P	Note #2 - Preservative check not applicable.	IR-5	3.6	0	3.6
1	TD19986-2	LAG	2	4X	N/P	Note #2 - Preservative check not applicable.	IR-5	3.6	0	3.6
1	TD19986-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.6	0	3.6
1	TD19986-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.6	0	3.6
1	TD19986-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.6	0	3.6
	TD19986-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD19986-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

TD19986: Chain of Custody
Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TD19986 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	5/4/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**5/4/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD19986**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**OP46012, VZ5702**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	5/4/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD19986				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46012, VZ5702				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**5/4/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD19986**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46012, VZ5702**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD19986
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5702-MB	Z65182.D	1	04/27/18	EM	n/a	n/a	VZ5702

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19986-1, TD19986-2, TD19986-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	95%	72-126%

Blank Spike Summary

Job Number: TD19986
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5702-BS	Z65178.D	1	04/27/18	EM	n/a	n/a	VZ5702

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19986-1, TD19986-2, TD19986-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	120	96	46-129
71-43-2	Benzene	25	22.6	90	68-119
107-06-2	1,2-Dichloroethane	25	23.2	93	68-121
100-41-4	Ethylbenzene	25	22.8	91	71-117
97-63-2	Ethyl methacrylate	25	24.8	99	59-118
78-83-1	Isobutyl alcohol	250	254	102	22-162
80-62-6	Methyl methacrylate	25	25.2	101	53-135
78-93-3	Methyl ethyl ketone	125	127	102	51-129
108-88-3	Toluene	25	22.0	88	73-119
1330-20-7	Xylene (total)	75	68.3	91	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD19986
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD20143-2MS	Z65186.D	1	04/27/18	EM	n/a	n/a	VZ5702
TD20143-2MSD	Z65187.D	1	04/27/18	EM	n/a	n/a	VZ5702
TD20143-2	Z65185.D	1	04/27/18	EM	n/a	n/a	VZ5702

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19986-1, TD19986-2, TD19986-3

CAS No.	Compound	TD20143-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	126	101	125	134	107	6	46-129/25
71-43-2	Benzene	1.0	U	25	23.6	94	25	24.2	97	3	68-119/12
107-06-2	1,2-Dichloroethane	1.0	U	25	23.8	95	25	24.8	99	4	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	22.9	92	25	23.7	95	3	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	23.0	92	25	24.1	96	5	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	277	111	250	289	116	4	22-162/30
80-62-6	Methyl methacrylate	10	U	25	23.7	95	25	24.4	98	3	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	123	98	125	129	103	5	51-129/22
108-88-3	Toluene	1.0	U	25	22.3	89	25	22.9	92	3	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	68.3	91	75	70.3	94	3	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD20143-2	Limits
1868-53-7	Dibromofluoromethane	104%	105%	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	100%	102%	68-124%
2037-26-5	Toluene-D8	97%	97%	99%	80-119%
460-00-4	4-Bromofluorobenzene	96%	95%	95%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD19986
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46012-MB	J191509.D	1	04/24/18	ZT	04/24/18	OP46012	EJ2746

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD19986-1, TD19986-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	10	3.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	27%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	65%	32-128%
4165-60-0	Nitrobenzene-d5	65%	29-115%
321-60-8	2-Fluorobiphenyl	66%	34-113%
1718-51-0	Terphenyl-d14	84%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD19986
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46012-BS	J191510.D	1	04/24/18	ZT	04/24/18	OP46012	EJ2746
OP46012-BSD	J191511.D	1	04/24/18	ZT	04/24/18	OP46012	EJ2746

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD19986-1, TD19986-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	34.2	68	31.8	64	7	39-107/30
	Cresol, Total	100	55.5	56	50.0	50	10	50-150/30 [a]

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	36%	31%	10-66%
4165-62-2	Phenol-d5	24%	20%	10-63%
118-79-6	2,4,6-Tribromophenol	78%	65%	32-128%
4165-60-0	Nitrobenzene-d5	79%	69%	29-115%
321-60-8	2-Fluorobiphenyl	70%	60%	34-113%
1718-51-0	Terphenyl-d14	94%	79%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch

SGS Job Number: TD20694

Sampling Date: 05/04/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: **28**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD20694

DOWMIM (Jacobs)
Project No: Charlie Burch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD20694-1	05/04/18	10:40		05/04/18	AQ	Water	SA-I-20180504
TD20694-2	05/04/18	10:48		05/04/18	AQ	Water	SA-E-20180504
TD20694-3	05/04/18	00:00		05/04/18	AQ	Trip Blank Water	TB-01-20180504

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD20694

Site: DOWMIM (Jacobs) **Report Date** 6/3/2018 2:06:08 PM

2 Samples and 1 Trip Blank were collected on 05/04/2018 and received intact at SGS North America Inc (SGS) on 05/04/2018 and properly preserved in 1 cooler at 1.4 Deg C. The samples received an Accutest job number of TD20694. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

See Sample Receipt Summary page regarding one broken container and no analyses marked on the chain-of-custody.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5719

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD20921-4MS, TD20921-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery for Ethyl methacrylate is outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery for 1,2-Dichloroethane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for MSD for Benzene, Ethylbenzene, Methyl ethyl ketone, Toluene, Xylene (total) are outside control limits for sample TD20921-4MSD.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46116

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD20687-4MS, TD20687-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory. Control limits have not been established for liquid-liquid extraction.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD20694
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 05/04/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD20694-1	**SA-I-20180504**					
1,2-Dichloroethane		0.0226	0.0010	0.00030	mg/l	SW846 8260C
TD20694-2	**SA-E-20180504**					
1,2-Dichloroethane		0.00031 J	0.0010	0.00030	mg/l	SW846 8260C
Methyl ethyl ketone		0.0035 J	0.010	0.0026	mg/l	SW846 8260C
TD20694-3	**TB-01-20180504**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-I-20180504		
Lab Sample ID:	TD20694-1	**Date Sampled:**	05/04/18
Matrix:	AQ - Water	**Date Received:**	05/04/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z65621.D	1	05/14/18 16:17	FI	n/a	n/a	VZ5719
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0226	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	94%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180504		
Lab Sample ID:	TD20694-1	**Date Sampled:**	05/04/18
Matrix:	AQ - Water	**Date Received:**	05/04/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O25754.D	1	05/08/18 14:24	ZT	05/07/18 10:15	OP46116	EO1438
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
	Cresol, Total	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	24%		10-66%
4165-62-2	Phenol-d5	15%		10-63%
118-79-6	2,4,6-Tribromophenol	71%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180504		
Lab Sample ID:	TD20694-2	**Date Sampled:**	05/04/18
Matrix:	AQ - Water	**Date Received:**	05/04/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z65622.D	1	05/14/18 16:42	FI	n/a	n/a	VZ5719
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00031	0.0010	0.00030	mg/l	J
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0035	0.010	0.0026	mg/l	J
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	96%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180504		
Lab Sample ID:	TD20694-2	**Date Sampled:**	05/04/18
Matrix:	AQ - Water	**Date Received:**	05/04/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O25755.D	1	05/08/18 14:55	ZT	05/07/18 10:15	OP46116	EO1438
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
	Cresol, Total	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-66%
4165-62-2	Phenol-d5	15%		10-63%
118-79-6	2,4,6-Tribromophenol	70%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180504		
Lab Sample ID:	TD20694-3	**Date Sampled:**	05/04/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/04/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z65623.D	1	05/14/18 17:06	FI	n/a	n/a	VZ5719
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	97%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE __ OF __

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #

Bottle Order Control #

Accutest Quote #

Accutest Job # TD20694

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Phone #:

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260	8270	LAB USE ONLY
1	SA-I-20180504	5/4/18	1040	MW	GW	5	3					2									
2	SA-E-20180504	5/4/18	1048	MW	GW	4	2					2									
3	TB-01-20180504	5/4/18	—	MW	GW	2	2														

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - AB8270SL & V8260SL

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	1224	5/4/18	1	2		2
3			3	4		4
5			5			

Custody Seal # ☐ Intact ☐ Not intact

Preserved where applicable

On Ice

Cooler Temp 1.4

TD20694: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# TD20694

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 5-4-18

Client: CH2M HILL

Cooler Number: 1

Thermometer ID: IR5 CF, °C 0 Corrected Temp, °C 1.4

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1 5

TD20694: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD20694 **Client:** CH2M HILL **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.4/1.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:			

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments Received with one broken vial.(SA-E-20180504)
No requested analyses marked on COC, but written. Samples were match accordenly to date, time bottle count.

Sample Receipt Log

Job #: TD20694 **Date / Time Received:** 5/4/2018 12:23:00 PM **Initials:** DS

Client: CH2M HILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD20694-1	LAG	1	4CC	N/P	Note #2 - Preservative check not applicable.	IR-5	1.4	0	1.4
1	TD20694-1	LAG	2	4CC	N/P	Note #2 - Preservative check not applicable.	IR-5	1.4	0	1.4
1	TD20694-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD20694-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD20694-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD20694-2	LAG	1	4CC	N/P	Note #2 - Preservative check not applicable.	IR-5	1.4	0	1.4
1	TD20694-2	LAG	2	4CC	N/P	Note #2 - Preservative check not applicable.	IR-5	1.4	0	1.4
1	TD20694-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD20694-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD20694-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD20694-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4

TD20694: Chain of Custody
Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TD20694 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	6/3/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**6/3/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD20694**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**OP46116, VZ5719**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?			X			**2**	
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?			X			**2**	
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	6/3/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD20694				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46116, VZ5719				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**6/3/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD20694**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46116, VZ5719**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD20694
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5719-MB	Z65608.D	1	05/14/18	FI	n/a	n/a	VZ5719

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD20694-1, TD20694-2, TD20694-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Blank Spike Summary

Job Number: TD20694
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5719-BS	Z65606.D	1	05/14/18	FI	n/a	n/a	VZ5719

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD20694-1, TD20694-2, TD20694-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	102	82	46-129
71-43-2	Benzene	25	22.9	92	68-119
107-06-2	1,2-Dichloroethane	25	22.0	88	68-121
100-41-4	Ethylbenzene	25	23.6	94	71-117
97-63-2	Ethyl methacrylate	25	27.4	110	59-118
78-83-1	Isobutyl alcohol	250	277	111	22-162
80-62-6	Methyl methacrylate	25	27.3	109	53-135
78-93-3	Methyl ethyl ketone	125	118	94	51-129
108-88-3	Toluene	25	23.3	93	73-119
1330-20-7	Xylene (total)	75	71.2	95	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD20694
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD20921-4MS	Z65617.D	10	05/14/18	FI	n/a	n/a	VZ5719
TD20921-4MSD	Z65618.D	10	05/14/18	FI	n/a	n/a	VZ5719
TD20921-4	Z65614.D	1	05/14/18	FI	n/a	n/a	VZ5719
TD20921-4	Z65615.D	10	05/14/18	FI	n/a	n/a	VZ5719

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD20694-1, TD20694-2, TD20694-3

CAS No.	Compound	TD20921-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50 U		1250	1330	106	1250	1060	85	23	46-129/25
71-43-2	Benzene	112		250	366	102	250	310	79	17*	68-119/12
107-06-2	1,2-Dichloroethane	992 [b]		250	1270	111	250	1130	55* [a]	12	68-121/12
100-41-4	Ethylbenzene	0.80	J	250	288	115	250	241	96	18*	71-117/12
97-63-2	Ethyl methacrylate	10 U		250	319	128*	250	271	108	16	59-118/19
78-83-1	Isobutyl alcohol	200 U		2500	3520	141	2500	2800	112	23	22-162/30
80-62-6	Methyl methacrylate	10 U		250	315	126	250	268	107	16	53-135/21
78-93-3	Methyl ethyl ketone	10 U		1250	1450	116	1250	1150	92	23*	51-129/22
108-88-3	Toluene	12.1		250	294	113	250	240	91	20*	73-119/13
1330-20-7	Xylene (total)	1.0 U		750	874	117	750	724	97	19*	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD20921-4	TD20921-4	Limits
1868-53-7	Dibromofluoromethane	100%	99%	100%	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	97%	97%	95%	68-124%
2037-26-5	Toluene-D8	99%	99%	102%	102%	80-119%
460-00-4	4-Bromofluorobenzene	100%	100%	102%	103%	72-126%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Result is from Run #2.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD20694
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46116-MB	O25748.D	1	05/08/18	ZT	05/07/18	OP46116	EO1438

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD20694-1, TD20694-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	2.5	0.52	ug/l	
	Cresol, Total	ND	2.5	0.71	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	24%	10-66%
4165-62-2	Phenol-d5	15%	10-63%
118-79-6	2,4,6-Tribromophenol	75%	32-128%
4165-60-0	Nitrobenzene-d5	65%	29-115%
321-60-8	2-Fluorobiphenyl	60%	34-113%
1718-51-0	Terphenyl-d14	81%	23-138%

Blank Spike Summary

Job Number: TD20694
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46116-BS	O25749.D	1	05/08/18	ZT	05/07/18	OP46116	EO1438

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD20694-1, TD20694-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	34.7	69	39-107
	Cresol, Total	100	44.0	44* [a]	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	25%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	81%	32-128%
4165-60-0	Nitrobenzene-d5	64%	29-115%
321-60-8	2-Fluorobiphenyl	67%	34-113%
1718-51-0	Terphenyl-d14	79%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD20694
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46116-MS	O25751.D	1	05/08/18	ZT	05/07/18	OP46116	EO1438
OP46116-MSD	O25752.D	1	05/08/18	ZT	05/07/18	OP46116	EO1438
TD20687-4	O25750.D	1	05/08/18	ZT	05/07/18	OP46116	EO1438

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD20694-1, TD20694-2

CAS No.	Compound	TD20687-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	2.7	J	55.6	44.7	76	54.9	36.8	62	19	39-107/32
	Cresol, Total	7.2		111	71.5	58	110	61.7	50	15	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD20687-4	Limits
367-12-4	2-Fluorophenol	40%	31%	36%	10-66%
4165-62-2	Phenol-d5	31%	26%	25%	10-63%
118-79-6	2,4,6-Tribromophenol	82%	74%	74%	32-128%
4165-60-0	Nitrobenzene-d5	64%	45%	60%	29-115%
321-60-8	2-Fluorobiphenyl	64%	46%	57%	34-113%
1718-51-0	Terphenyl-d14	45%	54%	59%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch

SGS Job Number: TD21647

Sampling Date: 05/24/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: **28**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD21647

DOWMIM (Jacobs)
Project No: Charlie Burch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD21647-1	05/24/18	14:15		05/24/18	AQ	Water	SA-E-20180524
TD21647-2	05/24/18	14:25		05/24/18	AQ	Water	SA-I-20180524
TD21647-3	05/24/18	00:00		05/24/18	AQ	Trip Blank Water	TB-01-20180524

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD21647

Site: DOWMIM (Jacobs) **Report Date** 6/8/2018 8:26:52 PM

2 Samples and 1 Trip Blank were collected on 05/24/2018 and received intact at SGS North America Inc (SGS) on 05/24/2018 and properly preserved in 1 cooler at 3.3 Deg C. The samples received an Accutest job number of TD21647. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VX3671

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD21672-13MS, TD21672-13MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46316

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD21650-4MS, TD21650-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory. Compound is also outside advisory control limits in the Blank Spike.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD21647
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 05/24/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD21647-1	**SA-E-20180524**					
Acetone		0.0120 J	0.050	0.010	mg/l	SW846 8260C
1,2-Dichloroethane		0.00082 J	0.0010	0.00030	mg/l	SW846 8260C
Methyl ethyl ketone		0.0823	0.010	0.0026	mg/l	SW846 8260C
TD21647-2	**SA-I-20180524**					
1,2-Dichloroethane		0.0164	0.0010	0.00030	mg/l	SW846 8260C
TD21647-3	**TB-01-20180524**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180524		
Lab Sample ID:	TD21647-1	**Date Sampled:**	05/24/18
Matrix:	AQ - Water	**Date Received:**	05/24/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01247614.D	1	06/01/18 15:35	FT	n/a	n/a	VX3671
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.0120	0.050	0.010	mg/l	J
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00082	0.0010	0.00030	mg/l	J
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0823	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		72-122%
17060-07-0	1,2-Dichloroethane-D4	93%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180524		
Lab Sample ID:	TD21647-1	**Date Sampled:**	05/24/18
Matrix:	AQ - Water	**Date Received:**	05/24/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J192060.D	1	05/31/18 17:26	ZT	05/30/18 12:50	OP46316	EJ2775
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		10-66%
4165-62-2	Phenol-d5	26%		10-63%
118-79-6	2,4,6-Tribromophenol	74%		32-128%
4165-60-0	Nitrobenzene-d5	62%		29-115%
321-60-8	2-Fluorobiphenyl	51%		34-113%
1718-51-0	Terphenyl-d14	83%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180524		
Lab Sample ID:	TD21647-2	**Date Sampled:**	05/24/18
Matrix:	AQ - Water	**Date Received:**	05/24/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01247615.D	1	06/01/18 16:01	FT	n/a	n/a	VX3671
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0164	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		72-122%
17060-07-0	1,2-Dichloroethane-D4	93%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180524		
Lab Sample ID:	TD21647-2	**Date Sampled:**	05/24/18
Matrix:	AQ - Water	**Date Received:**	05/24/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J192061.D	1	05/31/18 17:55	ZT	05/30/18 12:50	OP46316	EJ2775
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-66%
4165-62-2	Phenol-d5	25%		10-63%
118-79-6	2,4,6-Tribromophenol	66%		32-128%
4165-60-0	Nitrobenzene-d5	61%		29-115%
321-60-8	2-Fluorobiphenyl	54%		34-113%
1718-51-0	Terphenyl-d14	77%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180524		
Lab Sample ID:	TD21647-3	**Date Sampled:**	05/24/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/24/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01247608.D	1	06/01/18 12:58	FT	n/a	n/a	VX3671
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		72-122%
17060-07-0	1,2-Dichloroethane-D4	94%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

TD21647

CHAIN OF CUSTODY

PAGE 1 of 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # Not Applicable | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Jo # b

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road, Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (If different from Report to)

Company Name: **Bill directly to the Dow chemical company**
Street Address
City State Zip
Attention:

Requested Analyses

Select VOCs by 8260C:
1,2-dichloroethane
2-butanone
acetone
benzene
toluene
ethylbenzene
xylenes
ethyl methacrylate
methyl methacrylate
isobutanol

Select SVOCs by 8270D:
2,4-dimethylphenol
total cresols

Matrix Codes
DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL- Sludge SED- Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaO	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Select VOCs by 8260C	Select SVOCs by 8270D	LAB USE ONLY
1	SA-E-20180524	5/24/18	1415	RL	GW	5	3					2							X	X	
2	SA-I-20180524	5/24/18	1425	RL	GW	5	3					2							X	X	
3	TB-01-20180524	5/24/18		RL	GW	2	2												X		

TAGGED BY:

Turnaround Time (Business days)
Standard
Approved By (SGS Accutest PM): /
Date:
Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
REDT1 (Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary
TRRP
EDD Format
Other _____

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	5/24 1435	1 Dennis Melder	2 Dennis Melder	5-24-18 1530	2 [signature] 5/24/18 1530
3		3	4		4
5		5	Custody Seal # Intact Not intact	Preserved where applicable On Ice	Cooler Temp 3.3

TD21647: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# TD21647

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 5-24-18

Client: CH2m

Cooler Number: 1

Thermometer ID: DR5 CF, °C 0 Corrected Temp, °C 3.3

SAMPLES CONTAINED IN COOLER

SGS

Customer

DATE

SIGNATURE

090924

Form:- SM027-06 Rev 10/24/2016

TD21647: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD21647 **Client:** CH2M/JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 5/25/2018 3:30:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (3.3/3.3);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD21647 **Date / Time Received:** 5/25/2018 3:30:00 PM 3:30:0 **Initials:** BG

Client: CH2M/JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD21647-1	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.	IR-5	3.3	0	3.3
1	TD21647-1	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.	IR-5	3.3	0	3.3
1	TD21647-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.3	0	3.3
1	TD21647-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.3	0	3.3
1	TD21647-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.3	0	3.3
1	TD21647-2	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.	IR-5	3.3	0	3.3
1	TD21647-2	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.	IR-5	3.3	0	3.3
1	TD21647-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.3	0	3.3
1	TD21647-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.3	0	3.3
1	TD21647-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	3.3	0	3.3
	TD21647-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD21647-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD21647 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	6/8/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**6/8/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD21647**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**OP46316, VX3671**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	6/8/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD21647				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46316, VX3671				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**6/8/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD21647**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46316, VX3671**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD21647
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3671-MB	X01247605.D	1	06/01/18	FT	n/a	n/a	VX3671

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD21647-1, TD21647-2, TD21647-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	90%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	68-124%
2037-26-5	Toluene-D8	104%	80-119%
460-00-4	4-Bromofluorobenzene	96%	72-126%

Blank Spike Summary

Job Number: TD21647
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3671-BS	X01247602.D	1	06/01/18	FT	n/a	n/a	VX3671

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD21647-1, TD21647-2, TD21647-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	97.4	78	46-129
71-43-2	Benzene	25	20.0	80	68-119
107-06-2	1,2-Dichloroethane	25	19.3	77	68-121
100-41-4	Ethylbenzene	25	20.7	83	71-117
97-63-2	Ethyl methacrylate	25	21.2	85	59-118
78-83-1	Isobutyl alcohol	250	176	70	22-162
80-62-6	Methyl methacrylate	25	20.1	80	53-135
78-93-3	Methyl ethyl ketone	125	97.9	78	51-129
108-88-3	Toluene	25	20.3	81	73-119
1330-20-7	Xylene (total)	75	61.6	82	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	91%	72-122%
17060-07-0	1,2-Dichloroethane-D4	93%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD21647
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD21672-13MS	X01247611.D	200	06/01/18	FT	n/a	n/a	VX3671
TD21672-13MSD	X01247612.D	200	06/01/18	FT	n/a	n/a	VX3671
TD21672-13	X01247610.D	200	06/01/18	FT	n/a	n/a	VX3671

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD21647-1, TD21647-2, TD21647-3

CAS No.	Compound	TD21672-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10000	U	25000	18000	72	25000	19700	79	9	46-129/25
71-43-2	Benzene	200	U	5000	3640	73	5000	4120	82	12	68-119/12
107-06-2	1,2-Dichloroethane	291		5000	3900	72	5000	4310	80	10	68-121/12
100-41-4	Ethylbenzene	200	U	5000	3740	75	5000	4180	84	11	71-117/12
97-63-2	Ethyl methacrylate	2000	U	5000	3980	80	5000	4380	88	10	59-118/19
78-83-1	Isobutyl alcohol	40000	U	50000	32500	65	50000	35900	72	10	22-162/30
80-62-6	Methyl methacrylate	2000	U	5000	3900	78	5000	4270	85	9	53-135/21
78-93-3	Methyl ethyl ketone	2000	U	25000	17800	71	25000	19800	79	11	51-129/22
108-88-3	Toluene	200	U	5000	3680	74	5000	4130	83	12	73-119/13
1330-20-7	Xylene (total)	200	U	15000	11100	74	15000	12500	83	12	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD21672-13	Limits
1868-53-7	Dibromofluoromethane	90%	91%	91%	72-122%
17060-07-0	1,2-Dichloroethane-D4	93%	95%	96%	68-124%
2037-26-5	Toluene-D8	103%	102%	103%	80-119%
460-00-4	4-Bromofluorobenzene	100%	100%	96%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD21647
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46316-MB	J192046.D	1	05/31/18	ZT	05/30/18	OP46316	EJ2775

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD21647-1, TD21647-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	2.5	0.52	ug/l	
	Cresol, Total	ND	2.5	0.71	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	26%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	86%	32-128%
4165-60-0	Nitrobenzene-d5	70%	29-115%
321-60-8	2-Fluorobiphenyl	71%	34-113%
1718-51-0	Terphenyl-d14	96%	23-138%

Blank Spike Summary

Job Number: TD21647
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46316-BS	J192047.D	1	05/31/18	ZT	05/30/18	OP46316	EJ2775

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD21647-1, TD21647-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	30.5	61	39-107
	Cresol, Total	100	40.9	41*	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	24%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	75%	32-128%
4165-60-0	Nitrobenzene-d5	60%	29-115%
321-60-8	2-Fluorobiphenyl	61%	34-113%
1718-51-0	Terphenyl-d14	76%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD21647
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46316-MS	J192053.D	1	05/31/18	ZT	05/30/18	OP46316	EJ2775
OP46316-MSD	J192054.D	1	05/31/18	ZT	05/30/18	OP46316	EJ2775
TD21650-4	J192052.D	1	05/31/18	ZT	05/30/18	OP46316	EJ2775

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD21647-1, TD21647-2

CAS No.	Compound	TD21650-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	2.6 U		51.5	27.3	53	51	27.6	54	1	39-107/32
	Cresol, Total	2.6 U		103	39.3	38*	102	38.6	38*	2	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD21650-4	Limits
367-12-4	2-Fluorophenol	22%	22%	22%	10-66%
4165-62-2	Phenol-d5	16%	16%	15%	10-63%
118-79-6	2,4,6-Tribromophenol	71%	61%	70%	32-128%
4165-60-0	Nitrobenzene-d5	48%	55%	58%	29-115%
321-60-8	2-Fluorobiphenyl	50%	54%	57%	34-113%
1718-51-0	Terphenyl-d14	75%	68%	86%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch

SGS Job Number: TD22040

Sampling Date: 06/01/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: 27

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD22040

DOWMIM (Jacobs)
Project No: Charlie Burch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD22040-1	06/01/18	14:05		06/01/18	AQ	Water	SA-E-20180601
TD22040-2	06/01/18	14:15		06/01/18	AQ	Water	SA-I-20180601
TD22040-3	06/01/18	00:00		06/01/18	AQ	Trip Blank Water	TB-01-20180601

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD22040

Site: DOWMIM (Jacobs) **Report Date** 6/15/2018 7:01:13 PM

2 Samples and 1 Trip Blank were collected on 06/01/2018 and received intact at SGS North America Inc (SGS) on 06/01/2018 and properly preserved in 1 cooler at 4.6 Deg C. The samples received an Accutest job number of TD22040. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VK2295

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD22093-1MS, TD22093-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46387

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met, except for Cresol, Total as discussed below.
- Blank Spike and Blank Spike Duplicae Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD22040
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/01/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD22040-1	**SA-E-20180601**					
Acetone		0.0162 J	0.050	0.010	mg/l	SW846 8260C
1,2-Dichloroethane		0.0010	0.0010	0.00030	mg/l	SW846 8260C
Methyl ethyl ketone		0.115	0.010	0.0026	mg/l	SW846 8260C
TD22040-2	**SA-I-20180601**					
1,2-Dichloroethane		0.0167	0.0010	0.00030	mg/l	SW846 8260C
TD22040-3	**TB-01-20180601**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180601		
Lab Sample ID:	TD22040-1	**Date Sampled:**	06/01/18
Matrix:	AQ - Water	**Date Received:**	06/01/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K361096.D	1	06/09/18 14:43	FT	n/a	n/a	VK2295
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.0162	0.050	0.010	mg/l	J
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0010	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.115	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180601		
Lab Sample ID:	TD22040-1	**Date Sampled:**	06/01/18
Matrix:	AQ - Water	**Date Received:**	06/01/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29080.D	1	06/07/18 13:56	GJ	06/07/18 05:30	OP46387	EW1562
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-66%
4165-62-2	Phenol-d5	32%		10-63%
118-79-6	2,4,6-Tribromophenol	71%		32-128%
4165-60-0	Nitrobenzene-d5	60%		29-115%
321-60-8	2-Fluorobiphenyl	55%		34-113%
1718-51-0	Terphenyl-d14	84%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180601		
Lab Sample ID:	TD22040-2	**Date Sampled:**	06/01/18
Matrix:	AQ - Water	**Date Received:**	06/01/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K361097.D	1	06/09/18 15:08	FT	n/a	n/a	VK2295
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0167	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180601		
Lab Sample ID:	TD22040-2	**Date Sampled:**	06/01/18
Matrix:	AQ - Water	**Date Received:**	06/01/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29081.D	1	06/07/18 14:24	GJ	06/07/18 05:30	OP46387	EW1562
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		10-66%
4165-62-2	Phenol-d5	32%		10-63%
118-79-6	2,4,6-Tribromophenol	70%		32-128%
4165-60-0	Nitrobenzene-d5	62%		29-115%
321-60-8	2-Fluorobiphenyl	56%		34-113%
1718-51-0	Terphenyl-d14	84%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180601		
Lab Sample ID:	TD22040-3	**Date Sampled:**	06/01/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/01/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K361090.D	1	06/09/18 12:19	FT	n/a	n/a	VK2295
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 of 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking: # Not Applicable
SGS Accutest: Quote #
Bottle Order Control #: TD22040
SGS Accutest Job #: b

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rocerdale Road Tower 2
City: Houston State: Texas Zip:
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #:
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Elessa Sommers

Billing Information (If different from Report to)

Company Name: **Bill directly to the Dow chemical company**
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Select VOCs by 8260C:	Select SVOCs by 8270D:
1,2-dichloroethane 2-butanone acetone benzene toluene ethylbenzene xylenes ethyl methacrylate methyl methacrylate isobutanol	2,4-dimethylphenol total cresols

Matrix Codes: DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL- Sludge SED- Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNO	HNO3	H2SO4	NONE	Oil Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Select VOCs by 8260C:	Select SVOCs by 8270D:	LAB USE ONLY
1	SA-E-20180601	6/1/2018	1405	RL	GW	5	3					2							X	X	
2	SA-I-20180601	6/1/2018	1415	RL	GW	5	3					2							X	X	
3	TB-01-20180601	6/1/2018		RL	GW	2	2												X		

RELINQUISHED BY:

Turnaround Time (Business days)

Standard

Approved By (SGS Accutest PM): /

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
REDT1 (Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	06-01-18 1432	1	2	6-1-18	2 1530 6-1-18
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable: On Ice
5		5			Cooler Temp: 1.6

ACCUTEST

COOLER TEMP FORM

TC# TD22040

Delivered by (circle one): FedEx/UPS ALGC Drive Client

Date: 6-4-18

Client: Jacobs

Cooler Number: Thy

Thermometer ID: Thy CF, °C 0.0 Corrected Temp, °C 4.4

SAMPLES CONTAINED IN COOLER

(3) Blue (3) Clear

DELIVERED

SGS NORTH AMERICA

Client: JACOBS (CHARM HILL)

Project: CHARLIE BURCH ROBERT LINDGREN

Attn:

Cooler: 1 of 1

Form: SW027-06 Rev 10/24/2016

TD22040: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD22040 **Client:** CH2M HILL **Project:** CHARLI BURCH

Date / Time Received: 6/1/2018 1530 **Delivery Method:** Accutest Courier **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (4.6/4.6);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD22040 **Date / Time Received:** 6/1/2018 3:30:00 PM **Initials:** DS

Client: CH2M HILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD22040-1	LAG	1	4FF	N/P	Note #2 - Preservative check not applicable.	IR-4	4.6	0	4.6
1	TD22040-1	LAG	2	4FF	N/P	Note #2 - Preservative check not applicable.	IR-4	4.6	0	4.6
1	TD22040-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-2	LAG	1	4FF	N/P	Note #2 - Preservative check not applicable.	IR-4	4.6	0	4.6
1	TD22040-2	LAG	2	4FF	N/P	Note #2 - Preservative check not applicable.	IR-4	4.6	0	4.6
1	TD22040-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6
1	TD22040-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.6	0	4.6

TD22040: Chain of Custody
Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TD22040 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	6/15/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**6/15/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22040**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**OP46387, VK2295**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	6/15/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD22040				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46387, VK2295				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**6/15/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22040**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46387, VK2295**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD22040
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK2295-MB	K361085.D	1	06/09/18	FT	n/a	n/a	VK2295

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22040-1, TD22040-2, TD22040-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

Blank Spike Summary

Job Number: TD22040
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK2295-BS	K361081.D	1	06/09/18	FT	n/a	n/a	VK2295

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22040-1, TD22040-2, TD22040-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	99.4	80	46-129
71-43-2	Benzene	25	23.7	95	68-119
107-06-2	1,2-Dichloroethane	25	24.2	97	68-121
100-41-4	Ethylbenzene	25	26.7	107	71-117
97-63-2	Ethyl methacrylate	25	27.0	108	59-118
78-83-1	Isobutyl alcohol	250	273	109	22-162
80-62-6	Methyl methacrylate	25	26.3	105	53-135
78-93-3	Methyl ethyl ketone	125	114	91	51-129
108-88-3	Toluene	25	25.5	102	73-119
1330-20-7	Xylene (total)	75	79.6	106	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD22040
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD22093-1MS	K361087.D	1000	06/09/18	FT	n/a	n/a	VK2295
TD22093-1MSD	K361088.D	1000	06/09/18	FT	n/a	n/a	VK2295
TD22093-1	K361086.D	1000	06/09/18	FT	n/a	n/a	VK2295

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22040-1, TD22040-2, TD22040-3

CAS No.	Compound	TD22093-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125000	93400	75	125000	92900	74	1	46-129/25
71-43-2	Benzene	107000		25000	131000	96	25000	127000	80	3	68-119/12
107-06-2	1,2-Dichloroethane	ND		25000	24400	98	25000	22800	91	7	68-121/12
100-41-4	Ethylbenzene	1240		25000	29300	112	25000	26200	100	11	71-117/12
97-63-2	Ethyl methacrylate	ND		25000	27100	108	25000	26200	105	3	59-118/19
78-83-1	Isobutyl alcohol	ND		250000	251000	100	250000	243000	97	3	22-162/30
80-62-6	Methyl methacrylate	ND		25000	26000	104	25000	24800	99	5	53-135/21
78-93-3	Methyl ethyl ketone	ND		125000	106000	85	125000	114000	91	7	51-129/22
108-88-3	Toluene	19700		25000	47100	110	25000	43900	97	7	73-119/13
1330-20-7	Xylene (total)	1780		75000	84400	110	75000	75700	99	11	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD22093-1	Limits
1868-53-7	Dibromofluoromethane	101%	101%	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	99%	100%	68-124%
2037-26-5	Toluene-D8	102%	101%	101%	80-119%
460-00-4	4-Bromofluorobenzene	98%	97%	100%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD22040
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46387-MB	W29075.D	1	06/07/18	GJ	06/07/18	OP46387	EW1562

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD22040-1, TD22040-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	28%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	78%	32-128%
4165-60-0	Nitrobenzene-d5	71%	29-115%
321-60-8	2-Fluorobiphenyl	68%	34-113%
1718-51-0	Terphenyl-d14	90%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD22040
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46387-BS	W29076.D	1	06/07/18	GJ	06/07/18	OP46387	EW1562
OP46387-BSD	W29077.D	1	06/07/18	GJ	06/07/18	OP46387	EW1562

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD22040-1, TD22040-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	34.6	69	28.7	57	19	39-107/30
	Cresol, Total	100	48.6	49* [a]	39.2	39* [a]	21	50-150/30 [a]

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	29%	23%	10-66%
4165-62-2	Phenol-d5	20%	16%	10-63%
118-79-6	2,4,6-Tribromophenol	85%	71%	32-128%
4165-60-0	Nitrobenzene-d5	70%	58%	29-115%
321-60-8	2-Fluorobiphenyl	70%	57%	34-113%
1718-51-0	Terphenyl-d14	87%	72%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

13-Acre Tract and Source Area Air Stripper

SGS Job Number: TD22675

Sampling Date: 06/14/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: 42

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD22675

DOWMIM (Jacobs)
Project No: 13-Acre Tract and Source Area Air Stripper

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD22675-1	06/14/18	09:00		06/14/18	AQ	Water	RW-CB-5R-06142018
TD22675-2	06/14/18	09:40		06/14/18	AQ	Water	RW-CB-3R-06142018
TD22675-3	06/14/18	10:35		06/14/18	AQ	Water	RW-CB-3D-06142018
TD22675-4	06/14/18	10:50		06/14/18	AQ	Water	RW-CB-2R-06142018
TD22675-5	06/14/18	11:15		06/14/18	AQ	Water	RW-CB-4R-06142018
TD22675-6	06/14/18	12:10		06/14/18	AQ	Water	13AT-I-06142018
TD22675-7	06/14/18	12:15		06/14/18	AQ	Water	13AT-E-06142018
TD22675-8	06/14/18	12:35		06/14/18	AQ	Water	TW-CB-1-06142018
TD22675-9	06/14/18	12:55		06/14/18	AQ	Water	TW-CB-2-06142018
TD22675-10	06/14/18	13:00		06/14/18	AQ	Water	TW-CB-2-06142018 DUP
TD22675-11	06/14/18	13:05		06/14/18	AQ	Water	13AT-INT-06142018
TD22675-12	06/14/18	13:25		06/14/18	AQ	Water	PZ-3-06142018
TD22675-13	06/14/18	13:40		06/14/18	AQ	Water	PZ-2-06142018

Sample Summary
(continued)

Dow Chemical Company

Job No: TD22675

DOWMIM (Jacobs)
Project No: 13-Acre Tract and Source Area Air Stripper

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
TD22675-14	06/14/18	14:00		06/14/18	AQ	Water	PZ-4-06142018
TD22675-14D	06/14/18	14:00		06/14/18	AQ	Water Dup/MSD	PZ-4-06142018 MSD
TD22675-14S	06/14/18	14:00		06/14/18	AQ	Water Matrix Spike	PZ-4-06142018 MS
TD22675-15	06/14/18	00:00		06/14/18	AQ	Trip Blank Water	TB01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD22675

Site: DOWMIM (Jacobs) **Report Date** 6/28/2018 6:57:36 PM

14 Samples and 1 Trip Blank were collected on 06/14/2018 and received intact at SGS North America Inc (SGS) on 06/14/2018 and properly preserved in 1 cooler at 1.4 Deg C. The samples received an Accutest job number of TD22675. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE3037

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD22630-19MS, TD22630-19MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VE3038

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD22675-14MS, TD22675-14MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD22675
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD22675-1	**RW-CB-5R-06142018**					
1,2-Dichloroethane		0.0246	0.0010	0.00030	mg/l	SW846 8260C
TD22675-2	**RW-CB-3R-06142018**					
1,2-Dichloroethane		0.0113	0.0010	0.00030	mg/l	SW846 8260C
TD22675-3	**RW-CB-3D-06142018**					
1,2-Dichloroethane		0.0113	0.0010	0.00030	mg/l	SW846 8260C
TD22675-4	**RW-CB-2R-06142018**					
1,2-Dichloroethane		0.0120	0.0010	0.00030	mg/l	SW846 8260C
TD22675-5	**RW-CB-4R-06142018**					
1,2-Dichloroethane		0.0533	0.0010	0.00030	mg/l	SW846 8260C
TD22675-6	**13AT-I-06142018**					
1,2-Dichloroethane		0.00075 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-7	**13AT-E-06142018**					
No hits reported in this sample.						
TD22675-8	**TW-CB-1-06142018**					
1,2-Dichloroethane		0.00066 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-9	**TW-CB-2-06142018**					
1,2-Dichloroethane		0.0017	0.0010	0.00030	mg/l	SW846 8260C
TD22675-10	**TW-CB-2-06142018 DUP**					
1,2-Dichloroethane		0.0015	0.0010	0.00030	mg/l	SW846 8260C
TD22675-11	**13AT-INT-06142018**					
No hits reported in this sample.						

Summary of Hits

Job Number: TD22675
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD22675-12	**PZ-3-06142018**					
1,2-Dichloroethane		0.00053 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-13	**PZ-2-06142018**					
1,2-Dichloroethane		0.00079 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-14	**PZ-4-06142018**					
No hits reported in this sample.						
TD22675-15	**TB01**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RW-CB-5R-06142018		
Lab Sample ID:	TD22675-1	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068467.D	1	06/18/18 17:54	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0246	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	97%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3R-06142018		
Lab Sample ID:	TD22675-2	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068468.D	1	06/18/18 18:19	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0113	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3D-06142018		
Lab Sample ID:	TD22675-3	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068469.D	1	06/18/18 18:43	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0113	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-CB-2R-06142018
Lab Sample ID: TD22675-4
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 06/14/18
Date Received: 06/14/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068470.D	1	06/18/18 19:08	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0120	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-4R-06142018		
Lab Sample ID:	TD22675-5	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068471.D	1	06/18/18 19:33	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0533	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-I-06142018		
Lab Sample ID:	TD22675-6	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068487.D	1	06/19/18 02:03	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00075	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 13AT-E-06142018
Lab Sample ID: TD22675-7
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 06/14/18
Date Received: 06/14/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068488.D	1	06/19/18 02:28	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-CB-1-06142018		
Lab Sample ID:	TD22675-8	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068489.D	1	06/19/18 02:52	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00066	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TW-CB-2-06142018
Lab Sample ID: TD22675-9
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 06/14/18
Date Received: 06/14/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068490.D	1	06/19/18 03:17	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0017	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-CB-2-06142018 DUP		
Lab Sample ID:	TD22675-10	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068491.D	1	06/19/18 03:42	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0015	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-INT-06142018		
Lab Sample ID:	TD22675-11	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068492.D	1	06/19/18 04:06	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-3-06142018		
Lab Sample ID:	TD22675-12	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068493.D	1	06/19/18 04:30	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00053	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-2-06142018		
Lab Sample ID:	TD22675-13	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068494.D	1	06/19/18 04:54	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00079	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-4-06142018		
Lab Sample ID:	TD22675-14	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068483.D	1	06/19/18 00:26	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB01		
Lab Sample ID:	TD22675-15	**Date Sampled:**	06/14/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068482.D	1	06/19/18 00:02	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 of 12

TD22675

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking
SGS Accutest

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: Bill directly to the Dow chemical company
Street Address
City State Zip
Attention:

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge SED- Sediment OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

LAB USE ONLY

Select VOCs - 1,2 Dichloroethane (1,2 DCA) ONLY

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER
1	BW-CB-5R-06142018	6-14-18	0900															
2	RW-CB-3R-06142018	6-14-18	0940															
3	ZW-CB-3D-06142018	6-14-18	1035															
4	RW-CB-2R-06142018	6-14-18	1050															
5	RW-CB-4R-06142018	6-14-18	1115															
6	13AT-1-06142018	6-14-18	1210															
7	13AT-E-06142018	6-14-18	1215															
8	TW-CB-1-06142018	6-14-18	1235															
9	TW-CB-2-06142018	6-14-18	1255															
10	TW-CB-2-06142018 Dup	6-14-18	1300															
11	13AT-TNT-06142018	6-14-18	1305															

Turnaround Time (Business days)
Standard

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other _____ REDT1 (

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
1	6-14-18 1551	1 1551 6-14-18	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
3		3	4
Relinquished by:	Date Time:	Received By:	Custody Seal # Intact Not intact
5		5	

TAGGED BY:

CHAIN OF CUSTODY

PAGE 2 of 2

TD22675

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking
SGS Accutest

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road, Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: **Bill directly to the Dow chemical company**
Street Address
City State Zip
Attention:

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Select VOCs - 1,2 Dichloroethane (1,2 DCA) ONLY

LAB USE ONLY

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER
12	PZ-3-06142018	6-14-18	1325															
13	PZ-2-06142018	6-14-18	1340															
14	PZ-4-06142018	6-14-18	1400															
14 15	PZ-4-06142018 MS/MSD	6-14-18	1400															
15 16	TB01																	

Turnaround Time (Business days)
Standard

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
(Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other _____ REDT1

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
1	6-14-18 1551	1	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
3		3	4
Relinquished by:	Date Time:	Received By:	Custody Seal # Intact / Not intact
5		5	

6-14-18 1551

5.1 5

TD22675: Chain of Custody
Page 2 of 7

ACCUTEST

COOLER TEMP FORM

TC# TD22675

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 6/14/25

Client: CHEM

Cooler Number: 1

Thermometer ID: IR5 CF, °C 0.0 Corrected Temp, °C 1.4

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1

5

TD22675: Chain of Custody
Page 3 of 7

SGS Sample Receipt Summary

Job Number: TD22675 **Client:** CH2MHILL **Project:** CHARLIE BURCH

Date / Time Received: 6/14/2018 1551 **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.4/1.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☑	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments Matrix is water

Problem Resolution

Job Number: TD22675

CSR: Elessa Sommers **Response Date:** 6/18/2018

Response: No action required.

Sample Receipt Log

Job #: TD22675 **Date / Time Received:** 6/14/2018 3:51:00 PM 3:51:0 **Initials:** bg

Client: CH2MHILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD22675-1	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-1	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-1	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-2	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-2	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-2	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-3	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-3	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-3	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-4	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-4	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-4	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-5	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-5	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-5	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-6	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-6	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-6	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-7	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-7	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-7	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-8	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-8	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-8	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4

Sample Receipt Log

Job #: TD22675 **Date / Time Received:** 6/14/2018 3:51:00 PM 3:51:0 **Initials:** bg

Client: CH2MHILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD22675-9	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-9	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-9	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-10	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-10	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-10	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-11	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-11	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-11	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-12	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-12	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-12	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-13	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-13	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-13	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	4	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	5	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	6	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-15	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-15	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4

Appendix A Laboratory Data Package Cover Page

TD22675 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	6/28/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**6/28/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22675**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**VE3037, VE3038**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**2**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	6/28/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD22675				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	VE3037, VE3038				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**6/28/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22675**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VE3037, VE3038**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3037-MB	E0068449.D	1	06/18/18	FT	n/a	n/a	VE3037

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-1, TD22675-2, TD22675-3, TD22675-4, TD22675-5

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	97%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Method Blank Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3038-MB	E0068481.D	1	06/18/18	FT	n/a	n/a	VE3038

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-6, TD22675-7, TD22675-8, TD22675-9, TD22675-10, TD22675-11, TD22675-12, TD22675-13, TD22675-14, TD22675-15

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3037-BS	E0068446.D	1	06/18/18	FT	n/a	n/a	VE3037

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-1, TD22675-2, TD22675-3, TD22675-4, TD22675-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	19.7	79	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3038-BS	E0068478.D	1	06/18/18	FT	n/a	n/a	VE3038

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-6, TD22675-7, TD22675-8, TD22675-9, TD22675-10, TD22675-11, TD22675-12, TD22675-13, TD22675-14, TD22675-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	22.5	90	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	106%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD22630-19MS	E0068451.D	1000	06/18/18	FT	n/a	n/a	VE3037
TD22630-19MSD	E0068452.D	1000	06/18/18	FT	n/a	n/a	VE3037
TD22630-19	E0068450.D	1000	06/18/18	FT	n/a	n/a	VE3037

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-1, TD22675-2, TD22675-3, TD22675-4, TD22675-5

CAS No.	Compound	TD22630-19 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	ND		25000	20600	82	25000	20400	82	1	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD22630-19	Limits
1868-53-7	Dibromofluoromethane	98%	98%	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	98%	100%	68-124%
2037-26-5	Toluene-D8	100%	100%	97%	80-119%
460-00-4	4-Bromofluorobenzene	104%	106%	102%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD22675-14MS	E0068484.D	1	06/19/18	FT	n/a	n/a	VE3038
TD22675-14MSD	E0068485.D	1	06/19/18	FT	n/a	n/a	VE3038
TD22675-14	E0068483.D	1	06/19/18	FT	n/a	n/a	VE3038

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-6, TD22675-7, TD22675-8, TD22675-9, TD22675-10, TD22675-11, TD22675-12, TD22675-13, TD22675-14, TD22675-15

CAS No.	Compound	TD22675-14 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	1.0	U	25	21.9	88	25	21.9	88	0	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD22675-14	Limits
1868-53-7	Dibromofluoromethane	98%	99%	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	97%	99%	68-124%
2037-26-5	Toluene-D8	100%	99%	98%	80-119%
460-00-4	4-Bromofluorobenzene	103%	103%	103%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch Treatment System Influent and Effluent

SGS Job Number: TD22715

Sampling Date: 06/14/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: **28**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Test results relate only to samples analyzed.

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD22715

DOWMIM (Jacobs)
Project No: Charlie Burch Treatment System Influent and Effluent

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD22715-1	06/14/18	08:25		06/14/18	AQ	Water	SA-I-06142018
TD22715-2	06/14/18	08:30		06/14/18	AQ	Water	SA-E-06142018
TD22715-3	06/14/18	00:00		06/14/18	AQ	Trip Blank Water	TB-02

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD22715

Site: DOWMIM (Jacobs) **Report Date** 6/28/2018 7:09:01 PM

2 Samples and 1 Trip Blank were collected on 06/14/2018 and received intact at SGS North America Inc (SGS) on 06/14/2018 and properly preserved in 1 cooler at 5.4 Deg C. The samples received an Accutest job number of TD22715. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5782

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD22784-7MS, TD22784-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46517

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Blank Spike and Blank Spike Duplicae Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met, except for Cresol, Total as discussed above.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD22715
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD22715-1	**SA-I-06142018**					
1,2-Dichloroethane		0.0177	0.0010	0.00030	mg/l	SW846 8260C
TD22715-2	**SA-E-06142018**					
1,2-Dichloroethane		0.0018	0.0010	0.00030	mg/l	SW846 8260C
TD22715-3	**TB-02**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-I-06142018		
Lab Sample ID:	TD22715-1	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z66887.D	1	06/22/18 12:02	FT	n/a	n/a	VZ5782
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0177	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-06142018		
Lab Sample ID:	TD22715-1	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J192302.D	1	06/22/18 10:39	ZT	06/21/18 12:25	OP46517	EJ2791
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0052	0.0011	mg/l	
	Cresol, Total	0.0015 U	0.0052	0.0015	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-66%
4165-62-2	Phenol-d5	31%		10-63%
118-79-6	2,4,6-Tribromophenol	63%		32-128%
4165-60-0	Nitrobenzene-d5	52%		29-115%
321-60-8	2-Fluorobiphenyl	48%		34-113%
1718-51-0	Terphenyl-d14	78%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-06142018		
Lab Sample ID:	TD22715-2	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z66888.D	1	06/22/18 12:26	FT	n/a	n/a	VZ5782
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0018	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-06142018		
Lab Sample ID:	TD22715-2	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J192303.D	1	06/22/18 11:35	ZT	06/21/18 12:25	OP46517	EJ2791
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
	Cresol, Total	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		10-66%
4165-62-2	Phenol-d5	22%		10-63%
118-79-6	2,4,6-Tribromophenol	54%		32-128%
4165-60-0	Nitrobenzene-d5	36%		29-115%
321-60-8	2-Fluorobiphenyl	35%		34-113%
1718-51-0	Terphenyl-d14	73%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-02		
Lab Sample ID:	TD22715-3	**Date Sampled:**	06/14/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z66882.D	1	06/22/18 09:57	FT	n/a	n/a	VZ5782
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
100-41-4	Ethylbenzene	0.00030 U	0.0010	0.00030	mg/l	
97-63-2	Ethyl methacrylate	0.00036 U	0.010	0.00036	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00081 U	0.010	0.00081	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00030 U	0.0010	0.00030	mg/l	
1330-20-7	Xylene (total)	0.00065 U	0.0010	0.00065	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 of 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking | Bottle Order
SGS Accutest | SGS Accutest TD22715

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road, Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: Bill directly to the Dow chemical company
Street Address
City State Zip
Attention:

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZA/NaO	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Requested: Select VOCs by 8260C: 1,2-dichloroethane, 2-butanone, acetone, benzene, toluene, ethylbenzene, xylenes, ethyl methacrylate, methyl methacrylate, isobutanol	Requested: Select SVOCs by 8270D: 2,4-dimethylphenol, total cresols	Matrix Codes	LAB USE ONLY
1	SA-1-06142018	6-14-18	0825																			
2	SA-E-06142018	6-14-18	0830																			
3	TB-02																					

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge SED- Sediment OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

LOGGED BY:

Turnaround Time (Business days)
Standard

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other _____ REDT1 (Level 3+4)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Received By:
1	6-14-18 1551	1	2	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Received By:
3		3	4	4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact
5		5		

TD22715: Chain of Custody
Page 1 of 5

ACCUTEST

COOLER TEMP FORM

TC# TD22715

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 6/14/12

Client: CH2MHILL

Cooler Number: 1

Thermometer ID: 412 CF, °C 6 Corrected Temp, °C 5.4

SAMPLES CONTAINED IN COOLER

SGS NORTH AMERICA

Client: JOB

Project: CHARLIE BURCH

Attn: FABIAN EQUIVEL

Cooler: 1 of 1

FREEPORT

Form: SM027-06 Rev 10/24/2016

5.1

5

TD22715: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD22715 **Client:** CH2MHILL **Project:** CHARLIE BURCH

Date / Time Received: 6/15/2018 10:55:00 AM **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.4/5.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☐	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments Matrix is water

Problem Resolution

Job Number: TD22715

CSR: Elessa Sommers **Response Date:** 6/18/2018

Response: No action required.

Sample Receipt Log

Job #: TD22715 **Date / Time Received:** 3:51:00 PM 3:51:00 PM **Initials:** BG

Client: CH2MHILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD22715-1	LAG	1	4JJ	N/P	Note #2 - Preservative check not applicable.	IR-5	5.4	0	5.4
1	TD22715-1	LAG	2	4JJ	N/P	Note #2 - Preservative check not applicable.	IR-5	5.4	0	5.4
1	TD22715-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	5.4	0	5.4
1	TD22715-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	5.4	0	5.4
1	TD22715-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	5.4	0	5.4
1	TD22715-2	LAG	1	4JJ	N/P	Note #2 - Preservative check not applicable.	IR-5	5.4	0	5.4
1	TD22715-2	LAG	2	4JJ	N/P	Note #2 - Preservative check not applicable.	IR-5	5.4	0	5.4
1	TD22715-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	5.4	0	5.4
1	TD22715-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	5.4	0	5.4
1	TD22715-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	5.4	0	5.4
	TD22715-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD22715-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD22715 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	6/28/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**6/28/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22715**					
Reviewer	Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46517, VZ5782**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	6/28/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD22715				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46517, VZ5782				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**6/28/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22715**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46517, VZ5782**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD22715
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5782-MB	Z66881.D	1	06/22/18	FT	n/a	n/a	VZ5782

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22715-1, TD22715-2, TD22715-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.36	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.81	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.65	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike Summary

Job Number: TD22715
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5782-BS	Z66879.D	1	06/22/18	FT	n/a	n/a	VZ5782

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22715-1, TD22715-2, TD22715-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	122	98	46-129
71-43-2	Benzene	25	22.0	88	68-119
107-06-2	1,2-Dichloroethane	25	23.0	92	68-121
100-41-4	Ethylbenzene	25	23.1	92	71-117
97-63-2	Ethyl methacrylate	25	23.7	95	59-118
78-83-1	Isobutyl alcohol	250	268	107	22-162
80-62-6	Methyl methacrylate	25	23.7	95	53-135
78-93-3	Methyl ethyl ketone	125	120	96	51-129
108-88-3	Toluene	25	21.7	87	73-119
1330-20-7	Xylene (total)	75	68.3	91	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	104%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD22715
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD22784-7MS	Z66884.D	50	06/22/18	FT	n/a	n/a	VZ5782
TD22784-7MSD	Z66885.D	50	06/22/18	FT	n/a	n/a	VZ5782
TD22784-7	Z66883.D	50	06/22/18	FT	n/a	n/a	VZ5782

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22715-1, TD22715-2, TD22715-3

CAS No.	Compound	TD22784-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		6250	6020	96	6250	5850	94	3	46-129/25
71-43-2	Benzene	215		1250	1340	90	1250	1360	92	1	68-119/12
107-06-2	1,2-Dichloroethane	ND		1250	1150	92	1250	1150	92	0	68-121/12
100-41-4	Ethylbenzene	ND		1250	1200	96	1250	1230	98	2	71-117/12
97-63-2	Ethyl methacrylate	ND		1250	1230	98	1250	1190	95	3	59-118/19
78-83-1	Isobutyl alcohol	ND		12500	13200	106	12500	12900	103	2	22-162/30
80-62-6	Methyl methacrylate	ND		1250	1210	97	1250	1170	94	3	53-135/21
78-93-3	Methyl ethyl ketone	ND		6250	6110	98	6250	5980	96	2	51-129/22
108-88-3	Toluene	ND		1250	1120	90	1250	1150	92	3	73-119/13
1330-20-7	Xylene (total)	ND		3750	3570	95	3750	3640	97	2	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD22784-7	Limits
1868-53-7	Dibromofluoromethane	100%	102%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	105%	105%	105%	68-124%
2037-26-5	Toluene-D8	99%	100%	102%	80-119%
460-00-4	4-Bromofluorobenzene	100%	100%	99%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD22715
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46517-MB	W29268.D	1	06/22/18	ZT	06/21/18	OP46517	EW1574

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD22715-1, TD22715-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	32%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	87%	32-128%
4165-60-0	Nitrobenzene-d5	75%	29-115%
321-60-8	2-Fluorobiphenyl	71%	34-113%
1718-51-0	Terphenyl-d14	91%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD22715
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46517-BS	W29269.D	1	06/22/18	ZT	06/21/18	OP46517	EW1574
OP46517-BSD	W29270.D	1	06/22/18	ZT	06/21/18	OP46517	EW1574

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD22715-1, TD22715-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	34.6	69	34.5	69	0	39-107/30
	Cresol, Total	100	45.7	46*	48.5	49*	6	50-150/30 [a]

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	30%	33%	10-66%
4165-62-2	Phenol-d5	20%	21%	10-63%
118-79-6	2,4,6-Tribromophenol	81%	80%	32-128%
4165-60-0	Nitrobenzene-d5	70%	74%	29-115%
321-60-8	2-Fluorobiphenyl	71%	71%	34-113%
1718-51-0	Terphenyl-d14	79%	78%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch

SGS Job Number: TD23504

Sampling Date: 06/29/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: 27

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD23504

DOWMIM (Jacobs)
Project No: Charlie Burch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD23504-1	06/29/18	13:10		06/29/18	AQ	Ground Water	SA-E-20180629
TD23504-2	06/29/18	13:00		06/29/18	AQ	Ground Water	SA-I-20180629
TD23504-3	06/29/18	00:00		06/29/18	AQ	Trip Blank Water	TB-01-20180629

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD23504

Site: DOWMIM (Jacobs) **Report Date** 7/10/2018 5:39:49 PM

2 Samples and 1 Trip Blank were collected on 06/29/2018 and received intact at SGS North America Inc (SGS) on 06/29/2018 and properly preserved in 1 cooler at 1.8 Deg C. The samples received an Accutest job number of TD23504. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5805

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD23510-8MS, TD23510-8MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46638

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met, except for Cresol, Total as discussed above.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD23504
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/29/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD23504-1	**SA-E-20180629**					
1,2-Dichloroethane		0.0027	0.0010	0.00040	mg/l	SW846 8260C
TD23504-2	**SA-I-20180629**					
1,2-Dichloroethane		0.0189	0.0010	0.00040	mg/l	SW846 8260C
TD23504-3	**TB-01-20180629**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180629		
Lab Sample ID:	TD23504-1	**Date Sampled:**	06/29/18
Matrix:	AQ - Ground Water	**Date Received:**	06/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z67273.D	1	07/05/18 15:03	FT	n/a	n/a	VZ5805
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0027	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180629		
Lab Sample ID:	TD23504-1	**Date Sampled:**	06/29/18
Matrix:	AQ - Ground Water	**Date Received:**	06/29/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29369.D	1	07/06/18 11:45	ZT	07/06/18 06:30	OP46638	EW1582
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	55%		10-66%
4165-62-2	Phenol-d5	38%		10-63%
118-79-6	2,4,6-Tribromophenol	90%		32-128%
4165-60-0	Nitrobenzene-d5	76%		29-115%
321-60-8	2-Fluorobiphenyl	59%		34-113%
1718-51-0	Terphenyl-d14	92%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180629		
Lab Sample ID:	TD23504-2	**Date Sampled:**	06/29/18
Matrix:	AQ - Ground Water	**Date Received:**	06/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z67274.D	1	07/05/18 15:27	FT	n/a	n/a	VZ5805
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0189	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180629		
Lab Sample ID:	TD23504-2	**Date Sampled:**	06/29/18
Matrix:	AQ - Ground Water	**Date Received:**	06/29/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29370.D	1	07/06/18 12:14	ZT	07/06/18 06:30	OP46638	EW1582
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		10-66%
4165-62-2	Phenol-d5	31%		10-63%
118-79-6	2,4,6-Tribromophenol	78%		32-128%
4165-60-0	Nitrobenzene-d5	61%		29-115%
321-60-8	2-Fluorobiphenyl	47%		34-113%
1718-51-0	Terphenyl-d14	81%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180629		
Lab Sample ID:	TD23504-3	**Date Sampled:**	06/29/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z67262.D	1	07/05/18 10:33	FT	n/a	n/a	VZ5805
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 of 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking: # Not Applicable
SGS Accutest Quote #:
Bottle Control # Order:
SGS Accutest Job #: TD23504

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road, Tower 2
City: Houston State: Texas Zip:
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #:
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: Bill directly to the Dow chemical company
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Select VOCs by 8260C: 1,2-dichloroethane, 2-butanone, acetone, benzene, toluene, ethylbenzene, xylenes, ethyl methacrylate, methyl methacrylate, isobutanol

Select SVOCs by 8270D: 2,4-dimethylphenol, total cresols

Matrix Codes: DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL- Sludge SED- Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAcNaO	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	LAB USE ONLY
1	SA-F-20180629	06.29.18	1310	RL	GW	5	3					2							X
2	SA-E-20180629	06.29.18	1300	RL	GW	5	3					2							X
3	TB-01-20180629	06.29.18		RL	GW	2	2												X

Turnaround Time (Business days): Standard

Approved By (SGS Accutest PM): /

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
REDT1 (Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		6.29.18 1425	1	2	6.29.18 1715	2
3		Date Time:	3	4	Date Time:	4
5		Date Time:	5	Custody Seal #	Intact / Not intact	Preserved where applicable: On Ice

Cooler Temp. 1.8

TD23504: Chain of Custody
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SGS ACCUTEST

COOLER TEMP FORM

TC# TD23504

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 6-29-18

Client: CH2M Hill

Cooler Number:

Thermometer ID: JK9 CF, °C 0.0 Corrected Temp, °C 1.8

SAMPLES CONTAINED IN COOLER

(2) LAG
(3) VLA

CHAIRLIE BURCH - JACOBS 0876

Customer
06-29-18
DATE
SIGNATURE

SGS NORTH AMERICA

Client: JACOBS (CH2MHILL)

Project: CHARLIE BURCH

Attn: ROBERT LINDGREN

Cooler: 1 of 1

SGS

SM027-06 Rev 10/24/2016

TD23504: Chain of Custody
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SGS Sample Receipt Summary

Job Number: TD23504 **Client:** CH2M HILL **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.8/1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD23504 **Date / Time Received:** 6/29/2018 4:15:00 PM **Initials:** DS

Client: CH2M HILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD23504-1	LAG	1	4SS	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD23504-1	LAG	2	4SS	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD23504-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-2	LAG	1	4SS	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD23504-2	LAG	2	4SS	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD23504-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD23504-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8

TD23504: Chain of Custody
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Appendix A Laboratory Data Package Cover Page

TD23504 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	7/10/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast	LRC Date:	7/10/2018					
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD23504					
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	OP46638, VZ5805					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	OI	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	OI	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	OI	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	O	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	OI	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	OI	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	OI	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	OI	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	7/10/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD23504				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	OP46638, VZ5805				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**7/10/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD23504**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46638, VZ5805**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD23504
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5805-MB	Z67261.D	1	07/05/18	FT	n/a	n/a	VZ5805

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD23504-1, TD23504-2, TD23504-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike Summary

Job Number: TD23504
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5805-BS	Z67259.D	1	07/05/18	FT	n/a	n/a	VZ5805

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD23504-1, TD23504-2, TD23504-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	100	80	46-129
71-43-2	Benzene	25	20.5	82	68-119
107-06-2	1,2-Dichloroethane	25	20.9	84	68-121
100-41-4	Ethylbenzene	25	21.1	84	71-117
97-63-2	Ethyl methacrylate	25	24.0	96	59-118
78-83-1	Isobutyl alcohol	250	248	99	22-162
80-62-6	Methyl methacrylate	25	23.9	96	53-135
78-93-3	Methyl ethyl ketone	125	109	87	51-129
108-88-3	Toluene	25	20.4	82	73-119
1330-20-7	Xylene (total)	75	63.8	85	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	104%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD23504
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD23510-8MS	Z67264.D	10	07/05/18	FT	n/a	n/a	VZ5805
TD23510-8MSD	Z67265.D	10	07/05/18	FT	n/a	n/a	VZ5805
TD23510-8	Z67263.D	10	07/05/18	FT	n/a	n/a	VZ5805

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD23504-1, TD23504-2, TD23504-3

CAS No.	Compound	TD23510-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	500	U	1250	956	76	1250	989	79	3	46-129/25
71-43-2	Benzene	10	U	250	193	77	250	206	82	7	68-119/12
107-06-2	1,2-Dichloroethane	10	U	250	196	78	250	212	85	8	68-121/12
100-41-4	Ethylbenzene	10	U	250	202	81	250	210	84	4	71-117/12
97-63-2	Ethyl methacrylate	100	U	250	223	89	250	231	92	4	59-118/19
78-83-1	Isobutyl alcohol	2000	U	2500	2540	102	2500	2470	99	3	22-162/30
80-62-6	Methyl methacrylate	100	U	250	211	84	250	233	93	10	53-135/21
78-93-3	Methyl ethyl ketone	100	U	1250	1070	86	1250	1060	85	1	51-129/22
108-88-3	Toluene	10	U	250	195	78	250	200	80	3	73-119/13
1330-20-7	Xylene (total)	10	U	750	600	80	750	630	84	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD23510-8	Limits
1868-53-7	Dibromofluoromethane	99%	100%	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	104%	102%	68-124%
2037-26-5	Toluene-D8	102%	100%	102%	80-119%
460-00-4	4-Bromofluorobenzene	98%	101%	101%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD23504
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46638-MB	W29366.D	1	07/06/18	ZT	07/06/18	OP46638	EW1582

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD23504-1, TD23504-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	27%	10-66%
4165-62-2	Phenol-d5	17%	10-63%
118-79-6	2,4,6-Tribromophenol	74%	32-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD23504
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46638-BS	W29367.D	1	07/06/18	ZT	07/06/18	OP46638	EW1582
OP46638-BSD	W29368.D	1	07/06/18	ZT	07/06/18	OP46638	EW1582

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD23504-1, TD23504-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	34.5	69	37.1	74	7	39-107/30
	Cresol, Total	100	47.9	48* [a]	51.0	51	6	50-150/30 [a]

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	31%	34%	10-66%
4165-62-2	Phenol-d5	20%	22%	10-63%
118-79-6	2,4,6-Tribromophenol	79%	81%	32-128%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

SGS Job Number: TD24127

Sampling Date: 07/13/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: **28**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

DOWMIM (Jacobs)

Job No: TD24127

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD24127-1	07/13/18	13:00		07/13/18	AQ	Ground Water	SA-E-20180713
TD24127-2	07/13/18	13:15		07/13/18	AQ	Ground Water	SA-I-20180713
TD24127-3	07/13/18	00:00		07/13/18	AQ	Trip Blank Water	TB-01-20180713

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Dow Chemical Company	**Job No**	TD24127
Site:	DOWMIM (Jacobs)	**Report Date**	7/23/2018 6:54:21 PM

2 Samples and 1 Trip Blank were collected on 07/13/2018 and received intact at SGS North America Inc (SGS) on 07/13/2018 and properly preserved in 1 cooler at 5.1 Deg C. The samples received an Accutest job number of TD24127. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE3056

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD24086-6MS, TD24086-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Acetone is outside control limits. Outside control limits biased high. Analyte not detected in associated samples.
- Matrix Spike Recovery for Acetone is outside control limits. Probable cause due to matrix interference.
- Matrix Spike and Matrix Spike Duplicate Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD for MS/MSD for Acetone is outside control limits for sample TD24086-6MSD.
- TD24127-1, TD24127-2, TD24127-3 for Acetone: CCV recovery was above method acceptance criteria. This target analyte was not detected in the samples.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46770

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD24126-3MS, TD24126-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD24127
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 07/13/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD24127-1	**SA-E-20180713**					
1,2-Dichloroethane		0.0083	0.0010	0.00040	mg/l	SW846 8260C
TD24127-2	**SA-I-20180713**					
1,2-Dichloroethane		0.0216	0.0010	0.00040	mg/l	SW846 8260C
TD24127-3	**TB-01-20180713**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180713		
Lab Sample ID:	TD24127-1	**Date Sampled:**	07/13/18
Matrix:	AQ - Ground Water	**Date Received:**	07/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068889.D	1	07/18/18 18:20	FT	n/a	n/a	VE3056
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0083	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	106%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180713		
Lab Sample ID:	TD24127-1	**Date Sampled:**	07/13/18
Matrix:	AQ - Ground Water	**Date Received:**	07/13/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29471.D	1	07/19/18 15:48	ZT	07/18/18 11:30	OP46770	EW1592
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	49%		10-66%
4165-62-2	Phenol-d5	33%		10-63%
118-79-6	2,4,6-Tribromophenol	91%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180713		
Lab Sample ID:	TD24127-2	**Date Sampled:**	07/13/18
Matrix:	AQ - Ground Water	**Date Received:**	07/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068890.D	1	07/18/18 18:45	FT	n/a	n/a	VE3056
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0216	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	107%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180713		
Lab Sample ID:	TD24127-2	**Date Sampled:**	07/13/18
Matrix:	AQ - Ground Water	**Date Received:**	07/13/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29472.D	1	07/19/18 16:16	ZT	07/18/18 11:30	OP46770	EW1592
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		10-66%
4165-62-2	Phenol-d5	30%		10-63%
118-79-6	2,4,6-Tribromophenol	87%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180713		
Lab Sample ID:	TD24127-3	**Date Sampled:**	07/13/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068873.D	1	07/18/18 11:46	FT	n/a	n/a	VE3056
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 of 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # Not Applicable | Bottle Order Control # | SGS Accutest Quote # | SGS Accutest Job # b TD24127

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road, Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: **Bill directly to the Dow chemical company**
Street Address
City State Zip
Attention:

Requested Analyses

Select VOCs by 8260C:
1,2-dichloroethane
2-butanone
acetone
benzene
toluene
ethylbenzene
xylenes
ethyl methacrylate
methyl methacrylate
isobutanol

Select SVOCs by 8270D:
2,4-dimethylphenol
total cresols

Matrix Codes

DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL- Sludge SED- Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNO	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER	LAB USE ONLY
-1 1	SA-E-20180713	13-Jul-18	1300	RCL	GW	5	3					2							X X
-2 2	SA-I-20180713	13-Jul-18	1315	RCL	GW	5	3					2							X X
-3 3	TB-01-20180713	13-Jul-18		RCL	GW	2	2												X

Turnaround Time (Business days)

Standard

Approved By (SGS Accutest PM): /

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
REDT1 (Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		7-13-18 1330	2	2	7-13-18 1330	2 1535 7-13-18
3		Date Time:	3	4	Date Time:	4
5		Date Time:	5	Custody Seal #	Intact / Not Intact	Preserved where applicable On Ice Cooler Temp. 1.7

TD24127: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# TD24127

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 7-13-18

Client: CH2M Hill

Cooler Number:

Thermometer ID: IR-4 CF, °C 0.0 Corrected Temp, °C 5.1

SAMPLES CONTAINED IN COOLER

J15131508130

TRK# 4448 3028 3820

77385

9622 0019 0 (000 087 5159) 3 00 4448 3028 3820

Part # 156148-434 RIT2 10/12

SGS

Customer JACO

DATE 13 July 18

SIGNATURE

Form: SM027-06 Rev 10/24/2016

TD24127: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD24127 **Client:** CH2M HILL **Project:** CHARLIE BURCH

Date / Time Received: 7/13/2018 1535 **Delivery Method:** Accutest Courier **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.1/5.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD24127 **Date / Time Received:** 7/13/2018 3:35:00 PM **Initials:** DS

Client: CH2M HILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD24127-1	LAG	1	4VV	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24127-1	LAG	2	4VV	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24127-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-2	LAG	1	4VV	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24127-2	LAG	2	4VV	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24127-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24127-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1

Appendix A Laboratory Data Package Cover Page

TD24127 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	7/23/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**7/23/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD24127**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**OP46770, VE3056**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?			X			**2**	
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	7/23/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD24127				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46770, VE3056				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?			X			2
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**7/23/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD24127**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46770, VE3056**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD24127
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3056-MB	E0068872.D	1	07/18/18	FT	n/a	n/a	VE3056

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD24127-1, TD24127-2, TD24127-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	107%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

Blank Spike Summary

Job Number: TD24127
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3056-BS	E0068875.D	1	07/18/18	FT	n/a	n/a	VE3056

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD24127-1, TD24127-2, TD24127-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	167	134* [a]	46-129
71-43-2	Benzene	25	21.6	86	68-119
107-06-2	1,2-Dichloroethane	25	22.6	90	68-121
100-41-4	Ethylbenzene	25	22.3	89	71-117
97-63-2	Ethyl methacrylate	25	25.6	102	59-118
78-83-1	Isobutyl alcohol	250	233	93	22-162
80-62-6	Methyl methacrylate	25	25.0	100	53-135
78-93-3	Methyl ethyl ketone	125	124	99	51-129
108-88-3	Toluene	25	21.3	85	73-119
1330-20-7	Xylene (total)	75	66.7	89	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	104%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

(a) Outside control limits biased high.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD24127
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD24086-6MS	E0068876.D	250	07/18/18	FT	n/a	n/a	VE3056
TD24086-6MSD	E0068877.D	250	07/18/18	FT	n/a	n/a	VE3056
TD24086-6	E0068874.D	250	07/18/18	FT	n/a	n/a	VE3056

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD24127-1, TD24127-2, TD24127-3

CAS No.	Compound	TD24086-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		31300	45500	146*	31300	31000	99	38*	46-129/25
71-43-2	Benzene	28500		6250	29800	21* [a]	6250	30100	26* [a]	1	68-119/12
107-06-2	1,2-Dichloroethane	ND		6250	5400	86	6250	5450	87	1	68-121/12
100-41-4	Ethylbenzene	3490		6250	8580	81	6250	8540	81	0	71-117/12
97-63-2	Ethyl methacrylate	ND		6250	6230	100	6250	6200	99	0	59-118/19
78-83-1	Isobutyl alcohol	ND		62500	62900	101	62500	55700	89	12	22-162/30
80-62-6	Methyl methacrylate	ND		6250	6140	98	6250	5930	95	3	53-135/21
78-93-3	Methyl ethyl ketone	ND		31300	30400	97	31300	24600	79	21	51-129/22
108-88-3	Toluene	1060		6250	6150	81	6250	6140	81	0	73-119/13
1330-20-7	Xylene (total)	369		18800	16600	87	18800	16600	87	0	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD24086-6	Limits
1868-53-7	Dibromofluoromethane	101%	101%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	103%	102%	107%	68-124%
2037-26-5	Toluene-D8	102%	102%	102%	80-119%
460-00-4	4-Bromofluorobenzene	99%	99%	100%	72-126%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD24127
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46770-MB	W29458.D	1	07/19/18	ZT	07/18/18	OP46770	EW1592

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD24127-1, TD24127-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	22%	10-66%
4165-62-2	Phenol-d5	13%	10-63%
118-79-6	2,4,6-Tribromophenol	61%	32-128%
4165-60-0	Nitrobenzene-d5	55%	29-115%
321-60-8	2-Fluorobiphenyl	57%	34-113%
1718-51-0	Terphenyl-d14	73%	23-138%

Blank Spike Summary

Job Number: TD24127
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46770-BS	W29459.D	1	07/19/18	ZT	07/18/18	OP46770	EW1592

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD24127-1, TD24127-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	40.0	80	39-107
	Cresol, Total	100	58.1	58	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	38%	10-66%
4165-62-2	Phenol-d5	23%	10-63%
118-79-6	2,4,6-Tribromophenol	89%	32-128%
4165-60-0	Nitrobenzene-d5	88%	29-115%
321-60-8	2-Fluorobiphenyl	88%	34-113%
1718-51-0	Terphenyl-d14	87%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD24127
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46770-MS	W29462.D	1	07/19/18	ZT	07/18/18	OP46770	EW1592
OP46770-MSD	W29463.D	1	07/19/18	ZT	07/18/18	OP46770	EW1592
TD24126-3	W29461.D	1	07/19/18	ZT	07/18/18	OP46770	EW1592

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD24127-1, TD24127-2

CAS No.	Compound	TD24126-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	ND		52.1	28.4	55	50	28.2	56	1	39-107/32
	Cresol, Total	ND		104	42.5	41*	100	38.5	39*	10	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD24126-3	Limits
367-12-4	2-Fluorophenol	26%	24%	26%	10-66%
4165-62-2	Phenol-d5	16%	15%	16%	10-63%
118-79-6	2,4,6-Tribromophenol	79%	75%	76%	32-128%
4165-60-0	Nitrobenzene-d5	60%	62%	66%	29-115%
321-60-8	2-Fluorobiphenyl	60%	63%	67%	34-113%
1718-51-0	Terphenyl-d14	77%	74%	89%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

SGS Job Number: TD24802

Sampling Date: 07/27/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: **28**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

DOWMIM (Jacobs)

Job No: TD24802

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD24802-1	07/27/18	13:00		07/27/18	AQ	Water	SA-E-20180727
TD24802-2	07/27/18	13:15		07/27/18	AQ	Water	SA-I-20180727
TD24802-3	07/27/18	00:00		07/27/18	AQ	Trip Blank Water	TB-01-20180727

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD24802

Site: DOWMIM (Jacobs) **Report Date** 8/9/2018 6:30:17 PM

2 Samples and 1 Trip Blank were collected on 07/27/2018 and received intact at SGS North America Inc (SGS) on 07/27/2018 and properly preserved in 1 cooler at 5.1 Deg C. The samples received an Accutest job number of TD24802. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1800

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD24790-3MS, TD24790-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery for 1,2-Dichloroethane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP46887

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD24695-11MS, TD24695-11MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD24802
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 07/27/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD24802-1	**SA-E-20180727**					
1,2-Dichloroethane		0.0120	0.0010	0.00040	mg/l	SW846 8260C
Methyl ethyl ketone		0.0076 J	0.010	0.0026	mg/l	SW846 8260C
TD24802-2	**SA-I-20180727**					
1,2-Dichloroethane		0.0254	0.0010	0.00040	mg/l	SW846 8260C
TD24802-3	**TB-01-20180727**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180727		
Lab Sample ID:	TD24802-1	**Date Sampled:**	07/27/18
Matrix:	AQ - Water	**Date Received:**	07/27/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R0347632.D	1	08/02/18 15:51	FI	n/a	n/a	VR1800
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0120	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0076	0.010	0.0026	mg/l	J
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	95%		80-119%
460-00-4	4-Bromofluorobenzene	90%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180727		
Lab Sample ID:	TD24802-1	**Date Sampled:**	07/27/18
Matrix:	AQ - Water	**Date Received:**	07/27/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29726.D	1	08/01/18 18:34	ZT	07/30/18 07:00	OP46887	EW1602
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	46%		10-66%
4165-62-2	Phenol-d5	32%		10-63%
118-79-6	2,4,6-Tribromophenol	77%		32-128%
4165-60-0	Nitrobenzene-d5	71%		29-115%
321-60-8	2-Fluorobiphenyl	68%		34-113%
1718-51-0	Terphenyl-d14	75%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180727		
Lab Sample ID:	TD24802-2	**Date Sampled:**	07/27/18
Matrix:	AQ - Water	**Date Received:**	07/27/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R0347633.D	1	08/02/18 16:18	FI	n/a	n/a	VR1800
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0254	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	94%		80-119%
460-00-4	4-Bromofluorobenzene	91%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180727		
Lab Sample ID:	TD24802-2	**Date Sampled:**	07/27/18
Matrix:	AQ - Water	**Date Received:**	07/27/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29727.D	1	08/01/18 19:02	ZT	07/30/18 07:00	OP46887	EW1602
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
	Cresol, Total	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-66%
4165-62-2	Phenol-d5	29%		10-63%
118-79-6	2,4,6-Tribromophenol	74%		32-128%
4165-60-0	Nitrobenzene-d5	63%		29-115%
321-60-8	2-Fluorobiphenyl	60%		34-113%
1718-51-0	Terphenyl-d14	78%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180727		
Lab Sample ID:	TD24802-3	**Date Sampled:**	07/27/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/27/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R0347627.D	1	08/02/18 13:39	FI	n/a	n/a	VR1800
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	94%		80-119%
460-00-4	4-Bromofluorobenzene	90%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE ___ OF ___

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # TD24802

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Phone #:

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)
Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL- Sludge, SED-Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	LAB USE ONLY
1	SA-E-20180727	27-Jul-18	1300	RCL	WW	5	3					2							X	X	
2	SA-I-20180727	27-Jul-18	1315	RCL	WW	5	3					2							X	X	
3	TB-01-20180727	27-Jul-18			TB	2	2												X		

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day RUSH
- [ ] 4 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate
** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1 [signature]	7-27-18 1420	1 [signature] 7-27-18	1420	2 [signature] 7-27-18	1515	2 [signature] 1515	7-27-18
3		3		4		4	
5		5					

Custody Seal # ☑ Intact ☐ Not Intact — Preserved where applicable ☑ — On Ice ☑ — Cooler Temp: 5.1

TD24802: Chain of Custody
Page 1 of 4

ACCUTEST

COOLER TEMP FORM

TC# TD24802

Delivered by (circle one): FedEx/UPS (ALGC Driver) Client

Date: 7-27-18

Client: Jurus

Cooler Number:

Thermometer ID: IR4 CF; °C 0.0 Corrected Temp, °C 5.1

SAMPLES CONTAINED IN COOLER

(2) VOA

(3) 4oz

Customer

DATE 27 July 18

SIGNATURE

SGS

Form: SM027-06 Rev 10/24/2016

5.1

5

TD24802: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD24802 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.1/5.1);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD24802 **Date / Time Received:** 7/27/2018 3:15:00 PM **Initials:** DS

Client: JACIBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD24802-1	LAG	1	4Q	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24802-1	LAG	2	4Q	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24802-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-2	LAG	1	4Q	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24802-2	LAG	2	4Q	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD24802-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD24802-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1

Appendix A Laboratory Data Package Cover Page

TD24802 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	8/9/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast	LRC Date:	8/9/2018					
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD24802					
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	OP46887, VR1800					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	OI	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	OI	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	OI	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	O	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	OI	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	OI	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	OI	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	OI	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	8/9/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD24802				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP46887, VR1800				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**8/9/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD24802**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP46887, VR1800**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD24802
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1800-MB	R0347617.D	1	08/02/18	FI	n/a	n/a	VR1800

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD24802-1, TD24802-2, TD24802-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	90%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	95%	80-119%
460-00-4	4-Bromofluorobenzene	90%	72-126%

Blank Spike Summary

Job Number: TD24802
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1800-BS	R0347614.D	1	08/02/18	FI	n/a	n/a	VR1800

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD24802-1, TD24802-2, TD24802-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	107	86	46-129
71-43-2	Benzene	25	21.5	86	68-119
107-06-2	1,2-Dichloroethane	25	25.5	102	68-121
100-41-4	Ethylbenzene	25	22.8	91	71-117
97-63-2	Ethyl methacrylate	25	24.0	96	59-118
78-83-1	Isobutyl alcohol	250	248	99	22-162
80-62-6	Methyl methacrylate	25	27.1	108	53-135
78-93-3	Methyl ethyl ketone	125	110	88	51-129
108-88-3	Toluene	25	21.2	85	73-119
1330-20-7	Xylene (total)	75	69.6	93	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	92%	72-122%
17060-07-0	1,2-Dichloroethane-D4	111%	68-124%
2037-26-5	Toluene-D8	96%	80-119%
460-00-4	4-Bromofluorobenzene	94%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD24802
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD24790-3MS	R0347621.D	5000	08/02/18	FI	n/a	n/a	VR1800
TD24790-3MSD	R0347622.D	5000	08/02/18	FI	n/a	n/a	VR1800
TD24790-3	R0347618.D	5000	08/02/18	FI	n/a	n/a	VR1800

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD24802-1, TD24802-2, TD24802-3

CAS No.	Compound	TD24790-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	250000	U	625000	514000	82	625000	555000	89	8	46-129/25
71-43-2	Benzene	6260		125000	106000	80	125000	120000	91	12	68-119/12
107-06-2	1,2-Dichloroethane	845000		125000	920000	60* [a]	125000	980000	108	6	68-121/12
100-41-4	Ethylbenzene	5000	U	125000	109000	87	125000	120000	96	10	71-117/12
97-63-2	Ethyl methacrylate	50000	U	125000	113000	90	125000	126000	101	11	59-118/19
78-83-1	Isobutyl alcohol	1000000	U	1250000	1160000	93	1250000	1360000	109	16	22-162/30
80-62-6	Methyl methacrylate	50000	U	125000	131000	105	125000	146000	117	11	53-135/21
78-93-3	Methyl ethyl ketone	50000	U	625000	525000	84	625000	581000	93	10	51-129/22
108-88-3	Toluene	5000	U	125000	99400	80	125000	112000	90	12	73-119/13
1330-20-7	Xylene (total)	5000	U	375000	323000	86	375000	360000	96	11	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD24790-3	Limits
1868-53-7	Dibromofluoromethane	89%	90%	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	107%	109%	114%	68-124%
2037-26-5	Toluene-D8	96%	96%	95%	80-119%
460-00-4	4-Bromofluorobenzene	94%	96%	87%	72-126%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD24802
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46887-MB	W29695.D	1	07/31/18	ZT	07/30/18	OP46887	EW1601

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD24802-1, TD24802-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	26%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	73%	32-128%
4165-60-0	Nitrobenzene-d5	69%	29-115%
321-60-8	2-Fluorobiphenyl	67%	34-113%
1718-51-0	Terphenyl-d14	74%	23-138%

Blank Spike Summary

Job Number: TD24802
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46887-BS	W29696.D	1	07/31/18	ZT	07/30/18	OP46887	EW1601

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD24802-1, TD24802-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	41.7	83	39-107
	Cresol, Total	100	60.2	60	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	38%	10-66%
4165-62-2	Phenol-d5	24%	10-63%
118-79-6	2,4,6-Tribromophenol	97%	32-128%
4165-60-0	Nitrobenzene-d5	87%	29-115%
321-60-8	2-Fluorobiphenyl	88%	34-113%
1718-51-0	Terphenyl-d14	91%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD24802
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP46887-MS	W29698.D	1	07/31/18	ZT	07/30/18	OP46887	EW1601
OP46887-MSD	W29699.D	1	07/31/18	ZT	07/30/18	OP46887	EW1601
TD24695-11	W29697.D	1	07/31/18	ZT	07/30/18	OP46887	EW1601

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD24802-1, TD24802-2

CAS No.	Compound	TD24695-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.1 U		51	40.2	79	51	34.6	68	15	39-107/32
	Cresol, Total	5.1 U		102	69.7	68	102	58.6	57	17	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD24695-11	Limits
367-12-4	2-Fluorophenol	37%	31%	35%	10-66%
4165-62-2	Phenol-d5	31%	25%	30%	10-63%
118-79-6	2,4,6-Tribromophenol	80%	70%	78%	32-128%
4165-60-0	Nitrobenzene-d5	73%	64%	75%	29-115%
321-60-8	2-Fluorobiphenyl	74%	64%	70%	34-113%
1718-51-0	Terphenyl-d14	75%	66%	72%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch

SGS Job Number: TD25484

Sampling Date: 08/10/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 27

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Sample Summary

Dow Chemical Company

Job No: TD25484

DOWMIM (Jacobs)
Project No: Charlie Burch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD25484-1	08/10/18	14:21		08/10/18	AQ	Water	SA-E-20180810
TD25484-2	08/10/18	14:05		08/10/18	AQ	Water	SA-I-20180810
TD25484-3	08/10/18	00:00		08/10/18	AQ	Trip Blank Water	TB-01-20180810

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD25484

Site: DOWMIM (Jacobs) **Report Date** 8/24/2018 8:03:12 PM

2 Samples and 1 Trip Blank were collected on 08/10/2018 and received intact at SGS North America Inc (SGS) on 08/10/2018 and properly preserved in 1 cooler at 1.9 Deg C. The samples received an Accutest job number of TD25484. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5870

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD25301-7MS, TD25301-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47008

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD25484
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 08/10/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD25484-1	**SA-E-20180810**					
1,2-Dichloroethane		0.0012	0.0010	0.00040	mg/l	SW846 8260C
Methyl ethyl ketone		0.0149	0.010	0.0026	mg/l	SW846 8260C
TD25484-2	**SA-I-20180810**					
1,2-Dichloroethane		0.0191	0.0010	0.00040	mg/l	SW846 8260C
TD25484-3	**TB-01-20180810**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180810		
Lab Sample ID:	TD25484-1	**Date Sampled:**	08/10/18
Matrix:	AQ - Water	**Date Received:**	08/10/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68323.D	1	08/14/18 17:57	FT	n/a	n/a	VZ5870
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0012	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0149	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180810		
Lab Sample ID:	TD25484-1	**Date Sampled:**	08/10/18
Matrix:	AQ - Water	**Date Received:**	08/10/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29887.D	1	08/14/18 10:52	ZT	08/13/18 15:10	OP47008	EW1611
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		10-66%
4165-62-2	Phenol-d5	26%		10-63%
118-79-6	2,4,6-Tribromophenol	64%		32-128%
4165-60-0	Nitrobenzene-d5	55%		29-115%
321-60-8	2-Fluorobiphenyl	58%		34-113%
1718-51-0	Terphenyl-d14	74%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180810		
Lab Sample ID:	TD25484-2	**Date Sampled:**	08/10/18
Matrix:	AQ - Water	**Date Received:**	08/10/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68324.D	1	08/14/18 18:21	FT	n/a	n/a	VZ5870
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0191	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180810		
Lab Sample ID:	TD25484-2	**Date Sampled:**	08/10/18
Matrix:	AQ - Water	**Date Received:**	08/10/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W29888.D	1	08/14/18 11:20	ZT	08/13/18 15:10	OP47008	EW1611
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		10-66%
4165-62-2	Phenol-d5	29%		10-63%
118-79-6	2,4,6-Tribromophenol	69%		32-128%
4165-60-0	Nitrobenzene-d5	59%		29-115%
321-60-8	2-Fluorobiphenyl	62%		34-113%
1718-51-0	Terphenyl-d14	79%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20180810		
Lab Sample ID:	TD25484-3	**Date Sampled:**	08/10/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	08/10/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68318.D	1	08/14/18 15:54	FT	n/a	n/a	VZ5870
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	97%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking # | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job # TD25484

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): [illegible] Phone #: 8326199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	LAB USE ONLY
1	SA-E-2018 0810	8/10/18	14:21		WW	5	3					2							X	X	
2	SA-I-2018 0810	8/10/18	14:05		WW	5	3					2							X	X	
3	TB-01-2018 0810	8/10/18	—		TB	2	2												X		

FLAGGED BY:

VERIFIED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Form: SM021-0

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	[illegible]	08/10/18 14:33	1	08/10/18 1433		08/10/18 1745	2	8-10-18 14:58
3	Relinquished by Sampler: 8-10-18	Date Time: 1745	Received By: 3	8/11/18 1745	Relinquished By: 5	Date Time:	Received By: 4	Date Time:
5	Relinquished by:	Date Time:	Received By: 5	Date Time:	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

5.1 5

TD25484: Chain of Custody
Page 1 of 4

ACCUTEST

COOLER TEMP FORM

TC# TD25484

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 4-10-14

Client:

Cooler Number: 1841

Thermometer ID: IR-5 CF, °C 0.0 Corrected Temp, °C 1.9

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1 5

TD25484: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD25484 **Client:** JACOBS **Project:** CHARLIE BUIRCH

Date / Time Received: 8/10/2018 5:45:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.9/1.9);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD25484 **Date / Time Received:** 8/10/2018 5:45:00 PM 5:45:0 **Initials:** BG

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD25484-1	LAG	1	4P	N/P	Note #2 - Preservative check not applicable.	IR-5	1.9	0	1.9
1	TD25484-1	LAG	2	4P	N/P	Note #2 - Preservative check not applicable.	IR-5	1.9	0	1.9
1	TD25484-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.9	0	1.9
1	TD25484-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.9	0	1.9
1	TD25484-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.9	0	1.9
1	TD25484-2	LAG	1	4P	N/P	Note #2 - Preservative check not applicable.	IR-5	1.9	0	1.9
1	TD25484-2	LAG	2	4P	N/P	Note #2 - Preservative check not applicable.	IR-5	1.9	0	1.9
1	TD25484-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.9	0	1.9
1	TD25484-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.9	0	1.9
1	TD25484-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.9	0	1.9
	TD25484-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD25484-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD25484 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	8/24/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**8/24/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD25484**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**OP47008, VZ5870**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	8/24/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD25484				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP47008, VZ5870				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**8/24/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD25484**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP47008, VZ5870**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD25484
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5870-MB	Z68309.D	1	08/14/18	FT	n/a	n/a	VZ5870

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD25484-1, TD25484-2, TD25484-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

Blank Spike Summary

Job Number: TD25484
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5870-BS	Z68306.D	1	08/14/18	FT	n/a	n/a	VZ5870

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD25484-1, TD25484-2, TD25484-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	113	90	46-129
71-43-2	Benzene	25	25.3	101	68-119
107-06-2	1,2-Dichloroethane	25	25.0	100	68-121
100-41-4	Ethylbenzene	25	25.9	104	71-117
97-63-2	Ethyl methacrylate	25	28.2	113	59-118
78-83-1	Isobutyl alcohol	250	264	106	22-162
80-62-6	Methyl methacrylate	25	27.8	111	53-135
78-93-3	Methyl ethyl ketone	125	122	98	51-129
108-88-3	Toluene	25	25.1	100	73-119
1330-20-7	Xylene (total)	75	78.0	104	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD25484
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD25301-7MS	Z68315.D	50	08/14/18	FT	n/a	n/a	VZ5870
TD25301-7MSD	Z68316.D	50	08/14/18	FT	n/a	n/a	VZ5870
TD25301-7	Z68312.D	50	08/14/18	FT	n/a	n/a	VZ5870

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD25484-1, TD25484-2, TD25484-3

CAS No.	Compound	TD25301-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	2500	U	6250	4300	69	6250	4230	68	2	46-129/25
71-43-2	Benzene	50	U	1250	1280	102	1250	1240	99	3	68-119/12
107-06-2	1,2-Dichloroethane	88.6		1250	1280	95	1250	1270	95	1	68-121/12
100-41-4	Ethylbenzene	143		1250	1440	104	1250	1390	100	4	71-117/12
97-63-2	Ethyl methacrylate	500	U	1250	1350	108	1250	1290	103	5	59-118/19
78-83-1	Isobutyl alcohol	10000	U	12500	11400	91	12500	12000	96	5	22-162/30
80-62-6	Methyl methacrylate	500	U	1250	1320	106	1250	1190	95	10	53-135/21
78-93-3	Methyl ethyl ketone	500	U	6250	5340	85	6250	5230	84	2	51-129/22
108-88-3	Toluene	287		1250	1530	99	1250	1500	97	2	73-119/13
1330-20-7	Xylene (total)	1210		3750	5020	102	3750	4940	99	2	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD25301-7	Limits
1868-53-7	Dibromofluoromethane	98%	100%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	99%	97%	68-124%
2037-26-5	Toluene-D8	100%	99%	101%	80-119%
460-00-4	4-Bromofluorobenzene	98%	98%	99%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD25484
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47008-MB	W29883.D	1	08/14/18	ZT	08/13/18	OP47008	EW1611

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD25484-1, TD25484-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	41%	10-66%
4165-62-2	Phenol-d5	28%	10-63%
118-79-6	2,4,6-Tribromophenol	103%	32-128%
4165-60-0	Nitrobenzene-d5	96%	29-115%
321-60-8	2-Fluorobiphenyl	96%	34-113%
1718-51-0	Terphenyl-d14	109%	23-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD25484
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47008-BS	W29884.D	1	08/14/18	ZT	08/13/18	OP47008	EW1611
OP47008-BSD	W29885.D	1	08/14/18	ZT	08/13/18	OP47008	EW1611

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD25484-1, TD25484-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	50	36.7	73	38.6	77	5	39-107/30
	Cresol, Total	100	50.8	51	56.3	56	10	50-150/30 [a]

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	32%	36%	10-66%
4165-62-2	Phenol-d5	21%	24%	10-63%
118-79-6	2,4,6-Tribromophenol	94%	86%	32-128%
4165-60-0	Nitrobenzene-d5	72%	78%	29-115%
321-60-8	2-Fluorobiphenyl	79%	80%	34-113%
1718-51-0	Terphenyl-d14	96%	83%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD26026

Sampling Date: 08/22/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 39

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD26026

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD26026-1	08/22/18	08:40		08/22/18	AQ	Water	SA-E-20180822
TD26026-2	08/22/18	08:50		08/22/18	AQ	Water	SA-I-20180822
TD26026-2D	08/22/18	08:50		08/22/18	AQ	Water Dup/MSD	SA-I-20180822 MSD
TD26026-2S	08/22/18	08:50		08/22/18	AQ	Water Matrix Spike	SA-I-20180822 MS
TD26026-3	08/22/18	00:00		08/22/18	AQ	Water	DUP-01-20180822
TD26026-4	08/22/18	00:00		08/22/18	AQ	Trip Blank Water	TB-01-20180822

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD26026

Site: DOWMIM (Jacobs) **Report Date** 9/4/2018 6:57:42 PM

3 Samples and 1 Trip Blank were collected on 08/22/2018 and received intact at SGS North America Inc (SGS) on 08/22/2018 and properly preserved in 1 cooler at 1.2 Deg C. The samples received an Accutest job number of TD26026. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VG2701

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD26026-2MS, TD26026-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VX3749

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD26117-3MS, TD26117-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47099

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD26026-2MS, TD26026-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN92251

- Sample TD26026-2DUP was used as the QC sample for pH.
- TD26026-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 18.5 C.
- TD26026-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 18.6 C.
- TD26026-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 19.0 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD26026
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 08/22/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD26026-1	**SA-E-20180822**					
1,2-Dichloroethane		0.0017	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		7.31			su	SM 4500H+ B-2011
TD26026-2	**SA-I-20180822**					
1,2-Dichloroethane		0.0203	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		5.96			su	SM 4500H+ B-2011
TD26026-3	**DUP-01-20180822**					
1,2-Dichloroethane		0.0017	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		7.34			su	SM 4500H+ B-2011
TD26026-4	**TB-01-20180822**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request.temp 18.5 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp 18.6 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp 19.0 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180822		
Lab Sample ID:	TD26026-1	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01250258.D	1	08/28/18 20:57	SC	n/a	n/a	VX3749
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0017	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180822		
Lab Sample ID:	TD26026-1	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30127.D	1	08/24/18 18:19	ZT	08/24/18 07:30	OP47099	EW1619
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		10-66%
4165-62-2	Phenol-d5	41%		10-63%
118-79-6	2,4,6-Tribromophenol	94%		32-128%
4165-60-0	Nitrobenzene-d5	80%		29-115%
321-60-8	2-Fluorobiphenyl	74%		34-113%
1718-51-0	Terphenyl-d14	88%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180822		
Lab Sample ID:	TD26026-1	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.31		su	1	08/24/18 13:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 18.5 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20180822		
Lab Sample ID:	TD26026-2	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0281417.D	1	08/28/18 17:37	SC	n/a	n/a	VG2701
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0203	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180822		
Lab Sample ID:	TD26026-2	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J192887.D	1	08/24/18 18:03	GJ	08/24/18 07:30	OP47099	EJ2830
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	59%		32-128%
4165-60-0	Nitrobenzene-d5	51%		29-115%
321-60-8	2-Fluorobiphenyl	45%		34-113%
1718-51-0	Terphenyl-d14	70%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180822		
Lab Sample ID:	TD26026-2	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.96		su	1	08/24/18 13:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 18.6 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP-01-20180822		
Lab Sample ID:	TD26026-3	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01250259.D	1	08/28/18 21:22	SC	n/a	n/a	VX3749
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0017	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-01-20180822		
Lab Sample ID:	TD26026-3	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30128.D	1	08/24/18 18:48	ZT	08/24/18 07:30	OP47099	EW1619
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	53%		10-66%
4165-62-2	Phenol-d5	39%		10-63%
118-79-6	2,4,6-Tribromophenol	78%		32-128%
4165-60-0	Nitrobenzene-d5	72%		29-115%
321-60-8	2-Fluorobiphenyl	64%		34-113%
1718-51-0	Terphenyl-d14	75%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-01-20180822		
Lab Sample ID:	TD26026-3	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.34		su	1	08/24/18 13:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 19.0 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-20180822		
Lab Sample ID:	TD26026-4	**Date Sampled:**	08/22/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01250257.D	1	08/28/18 20:32	SC	n/a	n/a	VX3749
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # TD26026

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Ham Phone #:

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH		LAB USE ONLY
1	SA-E-20180822	8/22/2018	0840		WW	6	3					3							X	X	X		
2	SA-I-20180822	8/22/2018	0850		WW	10 ~~6~~	3					3							X	X	X	Analyze MS & MSD for this sample	
3	DUP-01-20180822	8/22/2018	—		WW	6	3					3							X	X	X		
4	TB-01-20180822	8/22/2018	—		TB	2	2												X				

TAGGED BY:

VERIFIED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Form: SM021-0

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Containers: 1 pc. - 250 ml. Plastic Bottle; 2 pcs.- One Liter Amber; 3 pcs.- 40 ml. VOAs

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1 Atif Ham	16:17 08/22/18	1 [signature]	1612 8/22/18	2		2	
Relinquished by Sampler: 3		Received By: 3		Relinquished By: 4		Received By: 4	
Relinquished by: 5		Received By: 5		Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 1.2°C

5.1

5

TD26026: Chain of Custody
Page 1 of 5

ACCUTEST

COOLER TEMP FORM

TC# TD26026

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 10-22-18

Client: JCOBJ

Cooler Number: 1

Thermometer ID: T1 CF, °C 0 Corrected Temp, °C 1.2

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1

5

TD26026: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD26026 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 8/22/2018 4:12:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.2/1.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD26026 **Date / Time Received:** 8/22/2018 4:12:00 PM 4:12:0 **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD26026-1	LAG	1	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-1	LAG	2	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-1	250ml	3	3G	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	LAG	1	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	LAG	2	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	250ml	3	3G	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	LAG	7	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	LAG	8	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	LAG	12	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	LAG	13	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-3	LAG	1	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2

Sample Receipt Log

Job #: TD26026 **Date / Time Received:** 8/22/2018 4:12:00 PM 4:12:0 **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD26026-3	LAG	2	4V	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-3	250ml	3	3G	N/P	Note #2 - Preservative check not applicable.	IR9	1.2	0	1.2
1	TD26026-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD26026-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2

Appendix A Laboratory Data Package Cover Page

TD26026 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	9/4/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**9/4/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD26026**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92251, OP47099, VG2701, VX3749**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?		X			**2**
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			**2**
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?	X				
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	9/4/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD26026				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	GN92251, OP47099, VG2701, VX3749				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**9/4/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD26026**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92251, OP47099, VG2701, VX3749**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3749-MB	X01250240.D	1	08/28/18	SC	n/a	n/a	VX3749

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26026-1, TD26026-3, TD26026-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

Method Blank Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2701-MB	G0281412.D	1	08/28/18	SC	n/a	n/a	VG2701

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26026-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%
2037-26-5	Toluene-D8	97%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

Blank Spike Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3749-BS	X01250238.D	1	08/28/18	SC	n/a	n/a	VX3749

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26026-1, TD26026-3, TD26026-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	121	97	46-129
71-43-2	Benzene	25	23.3	93	68-119
107-06-2	1,2-Dichloroethane	25	24.5	98	68-121
100-41-4	Ethylbenzene	25	23.1	92	71-117
97-63-2	Ethyl methacrylate	25	23.9	96	59-118
78-83-1	Isobutyl alcohol	250	254	102	22-162
80-62-6	Methyl methacrylate	25	26.1	104	53-135
78-93-3	Methyl ethyl ketone	125	126	101	51-129
108-88-3	Toluene	25	22.5	90	73-119
1330-20-7	Xylene (total)	75	69.3	92	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	107%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	106%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2701-BS	G0281408.D	1	08/28/18	SC	n/a	n/a	VG2701

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26026-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	118	94	46-129
71-43-2	Benzene	25	26.8	107	68-119
107-06-2	1,2-Dichloroethane	25	24.9	100	68-121
100-41-4	Ethylbenzene	25	26.7	107	71-117
97-63-2	Ethyl methacrylate	25	24.9	100	59-118
78-83-1	Isobutyl alcohol	250	258	103	22-162
80-62-6	Methyl methacrylate	25	26.4	106	53-135
78-93-3	Methyl ethyl ketone	125	148	118	51-129
108-88-3	Toluene	25	26.2	105	73-119
1330-20-7	Xylene (total)	75	79.0	105	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD26117-3MS	X01250246.D	1	08/28/18	SC	n/a	n/a	VX3749
TD26117-3MSD	X01250247.D	1	08/28/18	SC	n/a	n/a	VX3749
TD26117-3	X01250242.D	1	08/28/18	SC	n/a	n/a	VX3749

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26026-1, TD26026-3, TD26026-4

CAS No.	Compound	TD26117-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	129	103	125	129	103	0	46-129/25
71-43-2	Benzene	ND		25	25.4	102	25	24.5	98	4	68-119/12
107-06-2	1,2-Dichloroethane	ND		25	26.6	106	25	25.6	102	4	68-121/12
100-41-4	Ethylbenzene	ND		25	25.0	100	25	23.8	95	5	71-117/12
97-63-2	Ethyl methacrylate	ND		25	25.3	101	25	24.4	98	4	59-118/19
78-83-1	Isobutyl alcohol	ND		250	252	101	250	259	104	3	22-162/30
80-62-6	Methyl methacrylate	ND		25	28.7	115	25	28.2	113	2	53-135/21
78-93-3	Methyl ethyl ketone	ND		125	127	102	125	127	102	0	51-129/22
108-88-3	Toluene	ND		25	24.4	98	25	23.1	92	5	73-119/13
1330-20-7	Xylene (total)	ND		75	74.3	99	75	71.2	95	4	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD26117-3	Limits
1868-53-7	Dibromofluoromethane	94%	93%	92%	72-122%
17060-07-0	1,2-Dichloroethane-D4	110%	109%	109%	68-124%
2037-26-5	Toluene-D8	102%	101%	103%	80-119%
460-00-4	4-Bromofluorobenzene	105%	104%	104%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD26026-2MS	G0281419.D	1	08/28/18	SC	n/a	n/a	VG2701
TD26026-2MSD	G0281420.D	1	08/28/18	SC	n/a	n/a	VG2701
TD26026-2	G0281417.D	1	08/28/18	SC	n/a	n/a	VG2701

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26026-2

CAS No.	Compound	TD26026-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	137	110	125	134	107	2	46-129/25
71-43-2	Benzene	1.0	U	25	26.0	104	25	25.8	103	1	68-119/12
107-06-2	1,2-Dichloroethane	20.3		25	43.1	91	25	43.9	94	2	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	26.4	106	25	26.0	104	2	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	23.2	93	25	23.5	94	1	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	246	98	250	255	102	4	22-162/30
80-62-6	Methyl methacrylate	10	U	25	24.3	97	25	24.1	96	1	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	135	108	125	135	108	0	51-129/22
108-88-3	Toluene	1.0	U	25	25.2	101	25	25.1	100	0	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	77.8	104	75	76.5	102	2	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD26026-2	Limits
1868-53-7	Dibromofluoromethane	101%	103%	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	102%	100%	68-124%
2037-26-5	Toluene-D8	100%	101%	98%	80-119%
460-00-4	4-Bromofluorobenzene	98%	99%	102%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47099-MB	J192877.D	1	08/24/18	GJ	08/24/18	OP47099	EJ2830

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD26026-1, TD26026-2, TD26026-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	32%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	92%	32-128%
4165-60-0	Nitrobenzene-d5	83%	29-115%
321-60-8	2-Fluorobiphenyl	82%	34-113%
1718-51-0	Terphenyl-d14	101%	23-138%

Blank Spike Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47099-BS	J192878.D	1	08/24/18	GJ	08/24/18	OP47099	EJ2830

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD26026-1, TD26026-2, TD26026-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	31.3	63	39-107
	Cresol, Total	100	41.8	42*	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	23%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	57%	32-128%
4165-60-0	Nitrobenzene-d5	60%	29-115%
321-60-8	2-Fluorobiphenyl	59%	34-113%
1718-51-0	Terphenyl-d14	68%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD26026
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47099-MS1	J192888.D	1	08/24/18	GJ	08/24/18	OP47099	EJ2830
OP47099-MSD1	J192889.D	1	08/24/18	GJ	08/24/18	OP47099	EJ2830
TD26026-2	J192887.D	1	08/24/18	GJ	08/24/18	OP47099	EJ2830

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD26026-1, TD26026-2, TD26026-3

CAS No.	Compound	TD26026-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0 U		50	37.0	74	50	38.2	76	3	39-107/32
	Cresol, Total	5.0 U		100	51.8	52	100	53.3	53	3	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD26026-2	Limits
367-12-4	2-Fluorophenol	26%	27%	19%	10-66%
4165-62-2	Phenol-d5	19%	19%	13%	10-63%
118-79-6	2,4,6-Tribromophenol	63%	70%	59%	32-128%
4165-60-0	Nitrobenzene-d5	60%	61%	51%	29-115%
321-60-8	2-Fluorobiphenyl	54%	54%	45%	34-113%
1718-51-0	Terphenyl-d14	71%	79%	70%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD26026
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN92251	TD26026-2	su	5.96	5.96	0.0	0-10%

Associated Samples:
Batch GN92251: TD26026-1, TD26026-2, TD26026-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD26714

Sampling Date: 09/05/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **36**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD26714

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD26714-1	09/05/18	13:55		09/05/18	AQ	Water	SA-E-20180905
TD26714-1D	09/05/18	13:55		09/05/18	AQ	Water Dup/MSD	SA-E-20180905 MSD
TD26714-1S	09/05/18	13:55		09/05/18	AQ	Water Matrix Spike	SA-E-20180905 MS
TD26714-2	09/05/18	13:40		09/05/18	AQ	Water	SA-I-20180905
TD26714-3	09/05/18	00:00		09/05/18	AQ	Water	DUP-01-20180905
TD26714-4	09/05/18	00:00		09/05/18	AQ	Trip Blank Water	TB-01-20180905

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD26714

Site: DOWMIM (Jacobs) **Report Date** 9/14/2018 7:37:35 PM

3 Samples and 1 Trip Blank were collected on 09/05/2018 and received intact at SGS North America Inc (SGS) on 09/05/2018 and properly preserved in 1 cooler at 1.8 Deg C. The samples received an Accutest job number of TD26714. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE3130

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD26714-1MS, TD26714-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47242

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD26714-1MS, TD26714-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN92568

- Sample TD26714-1DUP was used as the QC sample for pH.
- TD26714-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.3 C.
- TD26714-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.6 C.
- TD26714-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.6 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD26714
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 09/05/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD26714-1	**SA-E-20180905**					
1,2-Dichloroethane		0.0017	0.0010	0.00040	mg/l	SW846 8260C
Methyl ethyl ketone		0.0189	0.010	0.0026	mg/l	SW846 8260C
pH [a]		7.27			su	SM 4500H+ B-2011
TD26714-2	**SA-I-20180905**					
1,2-Dichloroethane		0.0187	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		5.88			su	SM 4500H+ B-2011
TD26714-3	**DUP-01-20180905**					
1,2-Dichloroethane		0.0015	0.0010	0.00040	mg/l	SW846 8260C
Methyl ethyl ketone		0.0289	0.010	0.0026	mg/l	SW846 8260C
pH [b]		7.21			su	SM 4500H+ B-2011
TD26714-4	**TB-01-20180905**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.6 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp. 20.3 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180905		
Lab Sample ID:	TD26714-1	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0070349.D	1	09/12/18 10:54	FT	n/a	n/a	VE3130
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0017	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0189	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	89%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180905		
Lab Sample ID:	TD26714-1	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P54799.D	1	09/10/18 10:43	GJ	09/08/18 06:30	OP47242	EP2660
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		10-66%
4165-62-2	Phenol-d5	14%		10-63%
118-79-6	2,4,6-Tribromophenol	64%		32-128%
4165-60-0	Nitrobenzene-d5	59%		29-115%
321-60-8	2-Fluorobiphenyl	55%		34-113%
1718-51-0	Terphenyl-d14	74%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180905		
Lab Sample ID:	TD26714-1	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.27		su	1	09/07/18 16:40	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.6 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20180905		
Lab Sample ID:	TD26714-2	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0070358.D	1	09/12/18 14:34	FT	n/a	n/a	VE3130
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0187	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180905		
Lab Sample ID:	TD26714-2	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P54807.D	1	09/10/18 14:34	GJ	09/08/18 06:30	OP47242	EP2660
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	74%		32-128%
4165-60-0	Nitrobenzene-d5	68%		29-115%
321-60-8	2-Fluorobiphenyl	66%		34-113%
1718-51-0	Terphenyl-d14	81%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180905		
Lab Sample ID:	TD26714-2	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.88		su	1	09/07/18 16:40	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.6 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP-01-20180905		
Lab Sample ID:	TD26714-3	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0070359.D	1	09/12/18 14:58	FT	n/a	n/a	VE3130
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0015	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0289	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	89%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-01-20180905		
Lab Sample ID:	TD26714-3	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P54808.D	1	09/10/18 15:03	GJ	09/08/18 06:30	OP47242	EP2660
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	20%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	59%		32-128%
4165-60-0	Nitrobenzene-d5	50%		29-115%
321-60-8	2-Fluorobiphenyl	48%		34-113%
1718-51-0	Terphenyl-d14	66%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-01-20180905		
Lab Sample ID:	TD26714-3	**Date Sampled:**	09/05/18
Matrix:	AQ - Water	**Date Received:**	09/05/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.21		su	1	09/07/18 16:40	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-20180905		
Lab Sample ID:	TD26714-4	**Date Sampled:**	09/05/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/05/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0070353.D	1	09/12/18 12:32	FT	n/a	n/a	VE3130
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS
10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking # | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job # TD26714

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hariz Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved: HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-20180905	9/5/18	13:55	Atif	WW	6	3					3							X	X	X	
2	SA-I-20180905	9/5/18	13:40	Atif	WW	6	3					3							X	X	X	
3	Field Duplicate - DUP-01-20180905	9/5/18	~	Atif	WW	6	3					3							X	X	X	
1	MS/MSD for sample SA-E-20180905	9/5/18	11:05/14:00	Atif	WW	10	6					4							X	X		
4	TB-01-20180905				TB	2	2												X			

TAGGED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	Atif Hariz	9/5/18 15:21	1	9/5/18	2		2	
3	Relinquished by Sampler:	Date Time:	Received By: 3	Date Time:	Relinquished By: 4	Date Time:	Received By: 4	Date Time:
5	Relinquished by:	Date Time:	Received By: 5	Date Time:	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp.

5.1 5

ACCUTEST

COOLER TEMP FORM

TG# TD26714

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 9-6-16

Client: JAC065

Cooler Number: 1861

Thermometer ID: IR-9 CF, °C 0.0 Corrected Temp, °C 1.8

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1 5

TD26714: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD26714 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 9/5/2018 3:21:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.8/1.8);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD26714 **Date / Time Received:** 9/5/2018 3:21:00 PM 3:21:00 **Initials:** bg

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD26714-1	LAG	1	4W	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	LAG	2	4W	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	LAG	3	4W	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	LAG	4	4W	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	LAG	5	4W	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	LAG	6	4W	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	250ml	7	3K	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD26714-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	12	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	13	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD26714-1	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
	TD26714-2	LAG	1	4W	N/P	Note #2 - Preservative check not applicable.				
	TD26714-2	LAG	2	4W	N/P	Note #2 - Preservative check not applicable.				
	TD26714-2	32oz	3	3K	N/P	Note #2 - Preservative check not applicable.				
	TD26714-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-3	LAG	1	4W	N/P	Note #2 - Preservative check not applicable.				

Sample Receipt Log

Job #: TD26714 **Date / Time Received:** 9/5/2018 3:21:00 PM 3:21:00 **Initials:** bg

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD26714-3	LAG	2	4W	N/P	Note #2 - Preservative check not applicable.				
	TD26714-3	32oz	3	3K	N/P	Note #2 - Preservative check not applicable.				
	TD26714-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD26714-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD26714 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	9/14/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**9/14/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD26714**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN92568, OP47242, VE3130**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	9/14/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD26714				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN92568, OP47242, VE3130				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**9/14/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD26714**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92568, OP47242, VE3130**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD26714
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3130-MB	E0070348.D	1	09/12/18	FT	n/a	n/a	VE3130

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26714-1, TD26714-2, TD26714-3, TD26714-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	95%	80-119%
460-00-4	4-Bromofluorobenzene	95%	72-126%

Blank Spike Summary

Job Number: TD26714
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3130-BS	E0070345.D	1	09/12/18	FT	n/a	n/a	VE3130

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26714-1, TD26714-2, TD26714-3, TD26714-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	106	85	46-129
71-43-2	Benzene	25	22.5	90	68-119
107-06-2	1,2-Dichloroethane	25	21.7	87	68-121
100-41-4	Ethylbenzene	25	24.2	97	71-117
97-63-2	Ethyl methacrylate	25	28.6	114	59-118
78-83-1	Isobutyl alcohol	250	239	96	22-162
80-62-6	Methyl methacrylate	25	26.8	107	53-135
78-93-3	Methyl ethyl ketone	125	114	91	51-129
108-88-3	Toluene	25	22.9	92	73-119
1330-20-7	Xylene (total)	75	73.7	98	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	94%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD26714
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD26714-1MS	E0070350.D	1	09/12/18	FT	n/a	n/a	VE3130
TD26714-1MSD	E0070351.D	1	09/12/18	FT	n/a	n/a	VE3130
TD26714-1	E0070349.D	1	09/12/18	FT	n/a	n/a	VE3130

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26714-1, TD26714-2, TD26714-3, TD26714-4

CAS No.	Compound	TD26714-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	113	90	125	114	91	1	46-129/25
71-43-2	Benzene	1.0	U	25	21.8	87	25	20.9	84	4	68-119/12
107-06-2	1,2-Dichloroethane	1.7		25	22.8	84	25	22.2	82	3	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	23.6	94	25	22.7	91	4	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	27.6	110	25	26.5	106	4	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	230	92	250	211	84	9	22-162/30
80-62-6	Methyl methacrylate	10	U	25	25.6	102	25	23.5	94	9	53-135/21
78-93-3	Methyl ethyl ketone	18.9		125	151	106	125	150	105	1	51-129/22
108-88-3	Toluene	1.0	U	25	22.2	89	25	21.3	85	4	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	72.5	97	75	69.9	93	4	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD26714-1	Limits
1868-53-7	Dibromofluoromethane	97%	98%	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	100%	68-124%
2037-26-5	Toluene-D8	99%	98%	102%	80-119%
460-00-4	4-Bromofluorobenzene	100%	99%	89%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD26714
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47242-MB	P54796.D	1	09/10/18	GJ	09/08/18	OP47242	EP2660

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD26714-1, TD26714-2, TD26714-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	25%	10-66%
4165-62-2	Phenol-d5	15%	10-63%
118-79-6	2,4,6-Tribromophenol	64%	32-128%
4165-60-0	Nitrobenzene-d5	66%	29-115%
321-60-8	2-Fluorobiphenyl	62%	34-113%
1718-51-0	Terphenyl-d14	80%	23-138%

Blank Spike Summary

Job Number: TD26714
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47242-BS	P54797.D	1	09/10/18	GJ	09/08/18	OP47242	EP2660

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD26714-1, TD26714-2, TD26714-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	29.5	59	39-107
	Cresol, Total	100	40.9	41* [a]	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	24%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	71%	32-128%
4165-60-0	Nitrobenzene-d5	62%	29-115%
321-60-8	2-Fluorobiphenyl	62%	34-113%
1718-51-0	Terphenyl-d14	64%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD26714
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47242-MS	P54800.D	1	09/10/18	GJ	09/08/18	OP47242	EP2660
OP47242-MSD	P54801.D	1	09/10/18	GJ	09/08/18	OP47242	EP2660
TD26714-1	P54799.D	1	09/10/18	GJ	09/08/18	OP47242	EP2660

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD26714-1, TD26714-2, TD26714-3

CAS No.	Compound	TD26714-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0 U		50	31.6	63	50	28.4	57	11	39-107/32
	Cresol, Total	5.0 U		100	44.6	45*	100	39.6	40*	12	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD26714-1	Limits
367-12-4	2-Fluorophenol	25%	22%	22%	10-66%
4165-62-2	Phenol-d5	17%	15%	14%	10-63%
118-79-6	2,4,6-Tribromophenol	69%	72%	64%	32-128%
4165-60-0	Nitrobenzene-d5	62%	57%	59%	29-115%
321-60-8	2-Fluorobiphenyl	62%	59%	55%	34-113%
1718-51-0	Terphenyl-d14	63%	66%	74%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD26714
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN92568	TD26714-1	su	7.27	7.27	0.0	0-10%

Associated Samples:
Batch GN92568: TD26714-1, TD26714-2, TD26714-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD27400

Sampling Date: 09/19/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 38

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD27400

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD27400-1	09/19/18	11:55		09/19/18	AQ	Water	SA-E-20180919
TD27400-1D	09/19/18	11:55		09/19/18	AQ	Water Dup/MSD	SA-E-20180919 MSD
TD27400-1S	09/19/18	11:55		09/19/18	AQ	Water Matrix Spike	SA-E-20180919 MS
TD27400-2	09/19/18	11:15		09/19/18	AQ	Water	SA-I-20180919
TD27400-3	09/19/18	00:00		09/19/18	AQ	Water	FIELD DUPLICATE

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD27400

Site: DOWMIM (Jacobs) **Report Date** 10/3/2018 2:29:45 PM

3 Samples were collected on 09/19/2018 and received intact at SGS North America Inc (SGS) on 09/19/2018 and properly preserved in 1 cooler at 5.1 Deg C. The samples received an Accutest job number of TD27400. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VX3776

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD27400-1MS, TD27400-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VZ5933

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD27410-1MS, TD27410-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47347

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD27400-1MS, TD27400-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN92937

- Sample TD27379-1DUP was used as the QC sample for pH.
- TD27400-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.1 C.
- TD27400-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.3 C.
- TD27400-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.4 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD27400
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 09/19/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD27400-1	**SA-E-20180919**					
1,2-Dichloroethane		0.0014	0.0010	0.00040	mg/l	SW846 8260C
Methyl ethyl ketone		0.0078 J	0.010	0.0026	mg/l	SW846 8260C
pH [a]		7.27			su	SM 4500H+ B-2011
TD27400-2	**SA-I-20180919**					
1,2-Dichloroethane		0.0210	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		6.23			su	SM 4500H+ B-2011
TD27400-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0214	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		6.01			su	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.3 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp. 23.4 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp. 23.1 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180919		
Lab Sample ID:	TD27400-1	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01250845.D	1	09/25/18 23:59	FT	n/a	n/a	VX3776
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0014	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0078	0.010	0.0026	mg/l	J
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180919		
Lab Sample ID:	TD27400-1	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27083.D	1	09/23/18 12:38	ZT	09/22/18 11:00	OP47347	EO1529
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	80%		32-128%
4165-60-0	Nitrobenzene-d5	59%		29-115%
321-60-8	2-Fluorobiphenyl	57%		34-113%
1718-51-0	Terphenyl-d14	68%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180919		
Lab Sample ID:	TD27400-1	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.27		su	1	09/24/18 18:10	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20180919		
Lab Sample ID:	TD27400-2	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z69551.D	1	09/24/18 18:09	FT	n/a	n/a	VZ5933
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0210	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180919		
Lab Sample ID:	TD27400-2	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30489.D	1	09/23/18 17:08	ZT	09/22/18 11:00	OP47347	EW1640
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	73%		32-128%
4165-60-0	Nitrobenzene-d5	55%		29-115%
321-60-8	2-Fluorobiphenyl	40%		34-113%
1718-51-0	Terphenyl-d14	82%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180919		
Lab Sample ID:	TD27400-2	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.23		su	1	09/24/18 18:10	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.4 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD27400-3	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z69552.D	1	09/24/18 18:33	FT	n/a	n/a	VZ5933
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0214	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD27400-3	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30490.D	1	09/23/18 17:35	ZT	09/22/18 11:00	OP47347	EW1640
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	67%		32-128%
4165-60-0	Nitrobenzene-d5	55%		29-115%
321-60-8	2-Fluorobiphenyl	41%		34-113%
1718-51-0	Terphenyl-d14	75%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD27400-3	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.01		su	1	09/24/18 18:10	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.1 c

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #:
Bottle Order Control #:
SGS Accutest Quote #:
SGS Accutest Job #: TD27400

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hasir Phone #: 832 419 9610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	Zn Ac/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
-1	SA-E-20180919	9/19/18	11:55		WW	6	3					3							X	X	X	
-2	SA-I-20180919	9/19/18	11:15		WW	6	3					3							X	X	X	
-3	Field Duplicate	9/19/18	—		WW	6	3					3							X	X	X	
-1	MS/MSD for sample SA-E-20180919	9/19/18	—		WW	10	6					4							X	X		
	~~TB-01-2018~~	~~9/19/18~~	—		TB	2	2												X			

No trip blank was included.

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	Atif Hasir	9/19/18 13:24			2		2	
3			3		4		4	
5			5		Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp: 5.1

5.1

SGS ACCUTEST

COOLER TEMP FORM

TC# TD27400

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 9-19-18

Client: Jacobs

Cooler Number:

Thermometer ID: TR4 CF, °C 0.0 Corrected Temp, °C 5.1

SAMPLES CONTAINED IN COOLER

(4) LAG
-1 (1) 250 NP
(9) VOA

-2/3 (2) LAG NP
(1) 250 NP
(3) VOA

Form: SM027-06 Rev 10/24/2016

TD27400: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD27400 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.1/5.1);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐	☑	☐	☐	☐
2. Trip Blank listed on COC:	☐	☑	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD27400 **Date / Time Received:** 9/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD27400-1	LAG	1	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	2	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	3	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	4	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	5	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	6	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	250ml	7	3O	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	12	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	13	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-2	LAG	1	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-2	LAG	2	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-2	250ml	3	3O	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-3	LAG	1	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1

Sample Receipt Log

Job #: TD27400 **Date / Time Received:** 9/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD27400-3	LAG	2	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-3	250ml	3	3O	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1

Appendix A Laboratory Data Package Cover Page

TD27400 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	10/3/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**10/3/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD27400**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92937, OP47347, VX3776, VZ5933**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?		X			**2**
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X			**2**
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	10/3/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD27400				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	GN92937, OP47347, VX3776, VZ5933				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**10/3/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD27400**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92937, OP47347, VX3776, VZ5933**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5933-MB	Z69533.D	1	09/24/18	FT	n/a	n/a	VZ5933

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-2, TD27400-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	109%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Method Blank Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3776-MB	X01250844.D	1	09/25/18	FT	n/a	n/a	VX3776

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Blank Spike Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5933-BS	Z69541.D	1	09/24/18	FT	n/a	n/a	VZ5933

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-2, TD27400-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	116	93	46-129
71-43-2	Benzene	25	24.8	99	68-119
107-06-2	1,2-Dichloroethane	25	25.7	103	68-121
100-41-4	Ethylbenzene	25	25.6	102	71-117
97-63-2	Ethyl methacrylate	25	26.0	104	59-118
78-83-1	Isobutyl alcohol	250	288	115	22-162
80-62-6	Methyl methacrylate	25	30.5	122	53-135
78-93-3	Methyl ethyl ketone	125	135	108	51-129
108-88-3	Toluene	25	24.1	96	73-119
1330-20-7	Xylene (total)	75	75.7	101	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	107%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3776-BS	X01250842.D	1	09/25/18	FT	n/a	n/a	VX3776

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	101	81	46-129
71-43-2	Benzene	25	22.8	91	68-119
107-06-2	1,2-Dichloroethane	25	22.4	90	68-121
100-41-4	Ethylbenzene	25	24.1	96	71-117
97-63-2	Ethyl methacrylate	25	24.9	100	59-118
78-83-1	Isobutyl alcohol	250	231	92	22-162
80-62-6	Methyl methacrylate	25	23.4	94	53-135
78-93-3	Methyl ethyl ketone	125	122	98	51-129
108-88-3	Toluene	25	23.1	92	73-119
1330-20-7	Xylene (total)	75	72.1	96	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	96%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD27410-1MS	Z69536.D	1	09/24/18	FT	n/a	n/a	VZ5933
TD27410-1MSD	Z69537.D	1	09/24/18	FT	n/a	n/a	VZ5933
TD27410-1	Z69534.D	1	09/24/18	FT	n/a	n/a	VZ5933
TD27410-1	Z69542.D	4	09/24/18	FT	n/a	n/a	VZ5933

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-2, TD27400-3

CAS No.	Compound	TD27410-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	106	85	125	106	85	0	46-129/25
71-43-2	Benzene	ND		25	22.2	89	25	21.7	87	2	68-119/12
107-06-2	1,2-Dichloroethane	ND		25	23.5	94	25	22.8	91	3	68-121/12
100-41-4	Ethylbenzene	ND		25	24.2	97	25	23.3	93	4	71-117/12
97-63-2	Ethyl methacrylate	ND		25	24.5	98	25	23.7	95	3	59-118/19
78-83-1	Isobutyl alcohol	ND		250	249	100	250	241	96	3	22-162/30
80-62-6	Methyl methacrylate	ND		25	27.9	112	25	26.9	108	4	53-135/21
78-93-3	Methyl ethyl ketone	ND		125	120	96	125	119	95	1	51-129/22
108-88-3	Toluene	ND		25	22.6	90	25	22.0	88	3	73-119/13
1330-20-7	Xylene (total)	ND		75	71.2	95	75	68.6	91	4	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD27410-1	TD27410-1	Limits
1868-53-7	Dibromofluoromethane	105%	105%	106%	105%	72-122%
17060-07-0	1,2-Dichloroethane-D4	111%	106%	110%	108%	68-124%
2037-26-5	Toluene-D8	102%	100%	104%	102%	80-119%
460-00-4	4-Bromofluorobenzene	101%	103%	102%	102%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD27400-1MS	X01250847.D	1	09/26/18	FT	n/a	n/a	VX3776
TD27400-1MSD	X01250848.D	1	09/26/18	FT	n/a	n/a	VX3776
TD27400-1	X01250845.D	1	09/25/18	FT	n/a	n/a	VX3776

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-1

CAS No.	Compound	TD27400-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50 U		125	99.5	80	125	104	83	4	46-129/25
71-43-2	Benzene	1.0 U		25	21.6	86	25	23.4	94	8	68-119/12
107-06-2	1,2-Dichloroethane	1.4		25	23.5	88	25	24.9	94	6	68-121/12
100-41-4	Ethylbenzene	1.0 U		25	22.4	90	25	24.8	99	10	71-117/12
97-63-2	Ethyl methacrylate	10 U		25	23.7	95	25	26.0	104	9	59-118/19
78-83-1	Isobutyl alcohol	200 U		250	227	91	250	256	102	12	22-162/30
80-62-6	Methyl methacrylate	10 U		25	23.1	92	25	24.5	98	6	53-135/21
78-93-3	Methyl ethyl ketone	7.8	J	125	114	85	125	131	99	14	51-129/22
108-88-3	Toluene	1.0 U		25	21.5	86	25	23.7	95	10	73-119/13
1330-20-7	Xylene (total)	1.0 U		75	67.8	90	75	74.3	99	9	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD27400-1	Limits
1868-53-7	Dibromofluoromethane	101%	99%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	104%	99%	105%	68-124%
2037-26-5	Toluene-D8	100%	101%	99%	80-119%
460-00-4	4-Bromofluorobenzene	98%	98%	102%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47347-MB	O27075.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD27400-1, TD27400-2, TD27400-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	21%	10-66%
4165-62-2	Phenol-d5	12%	10-63%
118-79-6	2,4,6-Tribromophenol	68%	32-128%
4165-60-0	Nitrobenzene-d5	54%	29-115%
321-60-8	2-Fluorobiphenyl	47%	34-113%
1718-51-0	Terphenyl-d14	74%	23-138%

Blank Spike Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47347-BS	O27076.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD27400-1, TD27400-2, TD27400-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	35.6	71	39-107
	Cresol, Total	100	52.1	52	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	29%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	93%	32-128%
4165-60-0	Nitrobenzene-d5	64%	29-115%
321-60-8	2-Fluorobiphenyl	57%	34-113%
1718-51-0	Terphenyl-d14	83%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47347-MS	O27079.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529
OP47347-MSD	O27080.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529
TD27400-1	O27083.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD27400-1, TD27400-2, TD27400-3

CAS No.	Compound	TD27400-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	33.6	67	50	29.9	60	12	39-107/32
	Cresol, Total	5.0	U	100	45.6	46*	100	39.9	40*	13	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD27400-1	Limits
367-12-4	2-Fluorophenol	26%	23%	22%	10-66%
4165-62-2	Phenol-d5	17%	15%	13%	10-63%
118-79-6	2,4,6-Tribromophenol	93%	90%	80%	32-128%
4165-60-0	Nitrobenzene-d5	63%	60%	59%	29-115%
321-60-8	2-Fluorobiphenyl	61%	62%	57%	34-113%
1718-51-0	Terphenyl-d14	77%	77%	68%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD27400
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN92937	TD27379-1	su	6.33	6.33	0.0	0-10%

Associated Samples:
Batch GN92937: TD27400-1, TD27400-2, TD27400-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD27400

Sampling Date: 09/19/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 38

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD27400

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD27400-1	09/19/18	11:55		09/19/18	AQ	Water	SA-E-20180919
TD27400-1D	09/19/18	11:55		09/19/18	AQ	Water Dup/MSD	SA-E-20180919 MSD
TD27400-1S	09/19/18	11:55		09/19/18	AQ	Water Matrix Spike	SA-E-20180919 MS
TD27400-2	09/19/18	11:15		09/19/18	AQ	Water	SA-I-20180919
TD27400-3	09/19/18	00:00		09/19/18	AQ	Water	FIELD DUPLICATE

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD27400

Site: DOWMIM (Jacobs) **Report Date** 10/3/2018 2:29:45 PM

3 Samples were collected on 09/19/2018 and received intact at SGS North America Inc (SGS) on 09/19/2018 and properly preserved in 1 cooler at 5.1 Deg C. The samples received an Accutest job number of TD27400. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VX3776

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD27400-1MS, TD27400-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VZ5933

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD27410-1MS, TD27410-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47347

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD27400-1MS, TD27400-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN92937

- Sample TD27379-1DUP was used as the QC sample for pH.
- TD27400-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.1 C.
- TD27400-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.3 C.
- TD27400-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.4 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD27400
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 09/19/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD27400-1	**SA-E-20180919**					
1,2-Dichloroethane		0.0014	0.0010	0.00040	mg/l	SW846 8260C
Methyl ethyl ketone		0.0078 J	0.010	0.0026	mg/l	SW846 8260C
pH [a]		7.27			su	SM 4500H+ B-2011
TD27400-2	**SA-I-20180919**					
1,2-Dichloroethane		0.0210	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		6.23			su	SM 4500H+ B-2011
TD27400-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0214	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		6.01			su	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.3 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp. 23.4 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp. 23.1 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20180919		
Lab Sample ID:	TD27400-1	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X01250845.D	1	09/25/18 23:59	FT	n/a	n/a	VX3776
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0014	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0078	0.010	0.0026	mg/l	J
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180919		
Lab Sample ID:	TD27400-1	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27083.D	1	09/23/18 12:38	ZT	09/22/18 11:00	OP47347	EO1529
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	80%		32-128%
4165-60-0	Nitrobenzene-d5	59%		29-115%
321-60-8	2-Fluorobiphenyl	57%		34-113%
1718-51-0	Terphenyl-d14	68%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20180919		
Lab Sample ID:	TD27400-1	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.27		su	1	09/24/18 18:10	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20180919		
Lab Sample ID:	TD27400-2	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z69551.D	1	09/24/18 18:09	FT	n/a	n/a	VZ5933
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0210	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180919		
Lab Sample ID:	TD27400-2	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30489.D	1	09/23/18 17:08	ZT	09/22/18 11:00	OP47347	EW1640
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	73%		32-128%
4165-60-0	Nitrobenzene-d5	55%		29-115%
321-60-8	2-Fluorobiphenyl	40%		34-113%
1718-51-0	Terphenyl-d14	82%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20180919		
Lab Sample ID:	TD27400-2	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.23		su	1	09/24/18 18:10	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.4 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD27400-3	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z69552.D	1	09/24/18 18:33	FT	n/a	n/a	VZ5933
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0214	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD27400-3	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30490.D	1	09/23/18 17:35	ZT	09/22/18 11:00	OP47347	EW1640
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	67%		32-128%
4165-60-0	Nitrobenzene-d5	55%		29-115%
321-60-8	2-Fluorobiphenyl	41%		34-113%
1718-51-0	Terphenyl-d14	75%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD27400-3	**Date Sampled:**	09/19/18
Matrix:	AQ - Water	**Date Received:**	09/19/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.01		su	1	09/24/18 18:10	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 23.1 c

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #:
Bottle Order Control #:
SGS Accutest Quote #:
SGS Accutest Job #: TD27400

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hasir Phone #: 832 419 9610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	Zn Ac/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
-1	SA-E-20180919	9/19/18	11:55		WW	6	3					3							X	X	X	
-2	SA-I-20180919	9/19/18	11:15		WW	6	3					3							X	X	X	
-3	Field Duplicate	9/19/18	—		WW	6	3					3							X	X	X	
-1	MS/MSD for sample SA-E-20180919	9/19/18	—		WW	10	6					4							X	X		
	~~TB-01-2018~~	~~9/19/18~~	—		TB	2	2												X			

No trip blank was included.

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	Atif Hasir	9/19/18 13:24			2		2	
3			3		4		4	
5			5		Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp: 5.1

5.1

SGS ACCUTEST

COOLER TEMP FORM

TC# TD27400

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 9-19-18

Client: Jacobs

Cooler Number:

Thermometer ID: TR4 CF, °C 0.0 Corrected Temp, °C 5.1

SAMPLES CONTAINED IN COOLER

(4) LAG
-1 (1) 250 NP
(9) VOA

-2/3 (2) LAG NP
(1) 250 NP
(3) VOA

Form: SM027-06 Rev 10/24/2016

TD27400: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD27400 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.1/5.1);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐	☑	☐	☐	☐
2. Trip Blank listed on COC:	☐	☑	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD27400 **Date / Time Received:** 9/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD27400-1	LAG	1	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	2	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	3	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	4	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	5	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	LAG	6	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	250ml	7	3O	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	12	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	13	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-1	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-2	LAG	1	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-2	LAG	2	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-2	250ml	3	3O	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-3	LAG	1	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1

Sample Receipt Log

Job #: TD27400 **Date / Time Received:** 9/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD27400-3	LAG	2	4AA	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-3	250ml	3	3O	N/P	Note #2 - Preservative check not applicable.	IR-4	5.1	0	5.1
1	TD27400-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1
1	TD27400-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	5.1	0	5.1

Appendix A Laboratory Data Package Cover Page

TD27400 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	10/3/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**10/3/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD27400**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92937, OP47347, VX3776, VZ5933**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?		X			**2**
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X			**2**
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	10/3/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD27400				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	GN92937, OP47347, VX3776, VZ5933				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**10/3/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD27400**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92937, OP47347, VX3776, VZ5933**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5933-MB	Z69533.D	1	09/24/18	FT	n/a	n/a	VZ5933

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-2, TD27400-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	109%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Method Blank Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3776-MB	X01250844.D	1	09/25/18	FT	n/a	n/a	VX3776

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Blank Spike Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5933-BS	Z69541.D	1	09/24/18	FT	n/a	n/a	VZ5933

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-2, TD27400-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	116	93	46-129
71-43-2	Benzene	25	24.8	99	68-119
107-06-2	1,2-Dichloroethane	25	25.7	103	68-121
100-41-4	Ethylbenzene	25	25.6	102	71-117
97-63-2	Ethyl methacrylate	25	26.0	104	59-118
78-83-1	Isobutyl alcohol	250	288	115	22-162
80-62-6	Methyl methacrylate	25	30.5	122	53-135
78-93-3	Methyl ethyl ketone	125	135	108	51-129
108-88-3	Toluene	25	24.1	96	73-119
1330-20-7	Xylene (total)	75	75.7	101	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	107%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3776-BS	X01250842.D	1	09/25/18	FT	n/a	n/a	VX3776

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	101	81	46-129
71-43-2	Benzene	25	22.8	91	68-119
107-06-2	1,2-Dichloroethane	25	22.4	90	68-121
100-41-4	Ethylbenzene	25	24.1	96	71-117
97-63-2	Ethyl methacrylate	25	24.9	100	59-118
78-83-1	Isobutyl alcohol	250	231	92	22-162
80-62-6	Methyl methacrylate	25	23.4	94	53-135
78-93-3	Methyl ethyl ketone	125	122	98	51-129
108-88-3	Toluene	25	23.1	92	73-119
1330-20-7	Xylene (total)	75	72.1	96	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	96%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD27410-1MS	Z69536.D	1	09/24/18	FT	n/a	n/a	VZ5933
TD27410-1MSD	Z69537.D	1	09/24/18	FT	n/a	n/a	VZ5933
TD27410-1	Z69534.D	1	09/24/18	FT	n/a	n/a	VZ5933
TD27410-1	Z69542.D	4	09/24/18	FT	n/a	n/a	VZ5933

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-2, TD27400-3

CAS No.	Compound	TD27410-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	106	85	125	106	85	0	46-129/25
71-43-2	Benzene	ND		25	22.2	89	25	21.7	87	2	68-119/12
107-06-2	1,2-Dichloroethane	ND		25	23.5	94	25	22.8	91	3	68-121/12
100-41-4	Ethylbenzene	ND		25	24.2	97	25	23.3	93	4	71-117/12
97-63-2	Ethyl methacrylate	ND		25	24.5	98	25	23.7	95	3	59-118/19
78-83-1	Isobutyl alcohol	ND		250	249	100	250	241	96	3	22-162/30
80-62-6	Methyl methacrylate	ND		25	27.9	112	25	26.9	108	4	53-135/21
78-93-3	Methyl ethyl ketone	ND		125	120	96	125	119	95	1	51-129/22
108-88-3	Toluene	ND		25	22.6	90	25	22.0	88	3	73-119/13
1330-20-7	Xylene (total)	ND		75	71.2	95	75	68.6	91	4	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD27410-1	TD27410-1	Limits
1868-53-7	Dibromofluoromethane	105%	105%	106%	105%	72-122%
17060-07-0	1,2-Dichloroethane-D4	111%	106%	110%	108%	68-124%
2037-26-5	Toluene-D8	102%	100%	104%	102%	80-119%
460-00-4	4-Bromofluorobenzene	101%	103%	102%	102%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD27400-1MS	X01250847.D	1	09/26/18	FT	n/a	n/a	VX3776
TD27400-1MSD	X01250848.D	1	09/26/18	FT	n/a	n/a	VX3776
TD27400-1	X01250845.D	1	09/25/18	FT	n/a	n/a	VX3776

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD27400-1

CAS No.	Compound	TD27400-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50 U		125	99.5	80	125	104	83	4	46-129/25
71-43-2	Benzene	1.0 U		25	21.6	86	25	23.4	94	8	68-119/12
107-06-2	1,2-Dichloroethane	1.4		25	23.5	88	25	24.9	94	6	68-121/12
100-41-4	Ethylbenzene	1.0 U		25	22.4	90	25	24.8	99	10	71-117/12
97-63-2	Ethyl methacrylate	10 U		25	23.7	95	25	26.0	104	9	59-118/19
78-83-1	Isobutyl alcohol	200 U		250	227	91	250	256	102	12	22-162/30
80-62-6	Methyl methacrylate	10 U		25	23.1	92	25	24.5	98	6	53-135/21
78-93-3	Methyl ethyl ketone	7.8	J	125	114	85	125	131	99	14	51-129/22
108-88-3	Toluene	1.0 U		25	21.5	86	25	23.7	95	10	73-119/13
1330-20-7	Xylene (total)	1.0 U		75	67.8	90	75	74.3	99	9	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD27400-1	Limits
1868-53-7	Dibromofluoromethane	101%	99%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	104%	99%	105%	68-124%
2037-26-5	Toluene-D8	100%	101%	99%	80-119%
460-00-4	4-Bromofluorobenzene	98%	98%	102%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47347-MB	O27075.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD27400-1, TD27400-2, TD27400-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	21%	10-66%
4165-62-2	Phenol-d5	12%	10-63%
118-79-6	2,4,6-Tribromophenol	68%	32-128%
4165-60-0	Nitrobenzene-d5	54%	29-115%
321-60-8	2-Fluorobiphenyl	47%	34-113%
1718-51-0	Terphenyl-d14	74%	23-138%

Blank Spike Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47347-BS	O27076.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD27400-1, TD27400-2, TD27400-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	35.6	71	39-107
	Cresol, Total	100	52.1	52	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	29%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	93%	32-128%
4165-60-0	Nitrobenzene-d5	64%	29-115%
321-60-8	2-Fluorobiphenyl	57%	34-113%
1718-51-0	Terphenyl-d14	83%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD27400
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47347-MS	O27079.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529
OP47347-MSD	O27080.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529
TD27400-1	O27083.D	1	09/23/18	ZT	09/22/18	OP47347	EO1529

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD27400-1, TD27400-2, TD27400-3

CAS No.	Compound	TD27400-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	33.6	67	50	29.9	60	12	39-107/32
	Cresol, Total	5.0	U	100	45.6	46*	100	39.9	40*	13	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD27400-1	Limits
367-12-4	2-Fluorophenol	26%	23%	22%	10-66%
4165-62-2	Phenol-d5	17%	15%	13%	10-63%
118-79-6	2,4,6-Tribromophenol	93%	90%	80%	32-128%
4165-60-0	Nitrobenzene-d5	63%	60%	59%	29-115%
321-60-8	2-Fluorobiphenyl	61%	62%	57%	34-113%
1718-51-0	Terphenyl-d14	77%	77%	68%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD27400
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN92937	TD27379-1	su	6.33	6.33	0.0	0-10%

Associated Samples:
Batch GN92937: TD27400-1, TD27400-2, TD27400-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD28260

Sampling Date: 10/03/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 37

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD28260

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD28260-1	10/03/18	11:30		10/03/18	AQ	Water	SA-E-20181003
TD28260-1D	10/03/18	11:30		10/03/18	AQ	Water Dup/MSD	SA-E-20181003 MSD
TD28260-1S	10/03/18	11:30		10/03/18	AQ	Water Matrix Spike	SA-E-20181003 MS
TD28260-2	10/03/18	12:00		10/03/18	AQ	Water	SA-I-20181003
TD28260-3	10/03/18	00:00		10/03/18	AQ	Water	FIELD DUPLICATE
TD28260-4	10/03/18	00:00		10/03/18	AQ	Trip Blank Water	TB-01-2018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD28260

Site: DOWMIM (Jacobs) **Report Date** 10/22/2018 2:53:25 P

3 Samples and 1 Trip Blank were collected on 10/03/2018 and received intact at SGS North America Inc (SGS) on 10/03/2018 and properly preserved in 2 coolers at 1.7 and 1 Deg C. The samples received an Accutest job number of TD28260. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE3165

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD28260-1MS, TD28260-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47513

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD28260-1MS, TD28260-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matric Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN93301

- Sample TD28260-1DUP was used as the QC sample for pH.
- TD28260-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 22.1 C.
- TD28260-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 22.1 C.
- TD28260-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 22.3 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD28260
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/03/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD28260-1	**SA-E-20181003**					
1,2-Dichloroethane		0.0017	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		6.90			su	SM 4500H+ B-2011
TD28260-2	**SA-I-20181003**					
1,2-Dichloroethane		0.0221	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		5.62			su	SM 4500H+ B-2011
TD28260-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0018	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		6.90			su	SM 4500H+ B-2011
TD28260-4	**TB-01-2018**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp.22.1 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 22.1 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp. 22.3 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181003		
Lab Sample ID:	TD28260-1	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071065.D	1	10/09/18 10:20	FI	n/a	n/a	VE3165
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0017	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	97%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181003		
Lab Sample ID:	TD28260-1	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30775.D	1	10/09/18 15:42	ZT	10/09/18 08:30	OP47513	EW1652
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		10-66%
4165-62-2	Phenol-d5	29%		10-63%
118-79-6	2,4,6-Tribromophenol	86%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181003		
Lab Sample ID:	TD28260-1	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.90		su	1	10/04/18 11:10	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp.22.1 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181003		
Lab Sample ID:	TD28260-2	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071078.D	1	10/09/18 15:38	FI	n/a	n/a	VE3165
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0221	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	95%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SA-I-20181003
Lab Sample ID: TD28260-2
Matrix: AQ - Water
Method: SW846 8270D SW846 3510C
Project: DOWMIM (Jacobs)

Date Sampled: 10/03/18
Date Received: 10/03/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30778.D	1	10/09/18 17:06	ZT	10/09/18 08:30	OP47513	EW1652
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	24%		10-63%
118-79-6	2,4,6-Tribromophenol	72%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181003		
Lab Sample ID:	TD28260-2	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.62		su	1	10/04/18 11:10	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 22.1 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD28260-3	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071079.D	1	10/09/18 16:02	FI	n/a	n/a	VE3165
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0018	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD28260-3	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30779.D	1	10/09/18 17:34	ZT	10/09/18 08:30	OP47513	EW1652
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		10-66%
4165-62-2	Phenol-d5	28%		10-63%
118-79-6	2,4,6-Tribromophenol	83%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD28260-3	**Date Sampled:**	10/03/18
Matrix:	AQ - Water	**Date Received:**	10/03/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.90		su	1	10/04/18 11:10	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 22.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-2018		
Lab Sample ID:	TD28260-4	**Date Sampled:**	10/03/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/03/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071064.D	1	10/09/18 09:56	FI	n/a	n/a	VE3165
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD28260

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Haniz Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved: HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-2018|003	10/3/18	11:30		WW	6	3					3							X	X	X	
2	SA-I-2018|003	10/3/18	12:00		WW	6	3					3							X	X	X	
3	Field Duplicate	10/3/18			WW	6	3					3							X	X	X	
4	MS/MSD for sample SA-E-2018|003	10/3/18			WW	10	6					4							X	X		
5	TB-01-2018	10/3/18			TB	2	2												X			

LOGGED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	Atif Haniz	10/3/18 13:18	1		2		2	
3			3		4		4	
5			5					

Custody Seal #: [ ] Intact [ ] Not intact | Preserved where applicable: [ ] | On Ice: [ ] | Cooler Temp.:

5.1 5

TD28260: Chain of Custody
Page 1 of 6

SGS

COOLER TEMP FORM

SGS JOB# TD28260

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 10-3-19

Client: Jacobs

Cooler Number: 4

Thermometer ID: IR23 CF, °C 0 Corrected Temp, °C 1-7

SAMPLES CONTAINED IN COOLER

Inf

Surf

SM027
Rev. 7
1/3/18

5.1 5

TD28260: Chain of Custody
Page 2 of 6

SGS

COOLER TEMP FORM

SGS JOB#_____

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 10.3.18

Client: Jacobs

Cooler Number: 2

Thermometer ID: D23 CF, °C 0 Corrected Temp, °C 1.0

SAMPLES CONTAINED IN COOLER

EFF MS/MSD

TB

SM027
Rev. 7
1/3/18

TD28260: Chain of Custody
Page 3 of 6

SGS Sample Receipt Summary

Job Number: TD28260 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 2 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.7/1.7); #2: (1/1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD28260 **Date / Time Received:** 10/3/2018 1:18:00 PM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD28260-1	LAG	1	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	LAG	2	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	250ml	3	3C	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	LAG	7	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	LAG	8	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	LAG	12	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	LAG	13	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-1	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-1	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-2	LAG	1	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-2	LAG	2	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-2	250ml	3	3C	N/P	Note #2 - Preservative check not applicable.				
	TD28260-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-3	LAG	1	4CC	N/P	Note #2 - Preservative check not applicable.				

Sample Receipt Log

Job #: TD28260 **Date / Time Received:** 10/3/2018 1:18:00 PM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD28260-3	LAG	2	4CC	N/P	Note #2 - Preservative check not applicable.				
	TD28260-3	250ml	3	3C	N/P	Note #2 - Preservative check not applicable.				
	TD28260-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28260-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD28260 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	10/22/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**10/22/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD28260**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN93301, OP47513, VE3165**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	10/22/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD28260				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN93301, OP47513, VE3165				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**10/22/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD28260**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN93301, OP47513, VE3165**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD28260
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3165-MB	E0071063.D	1	10/09/18	FI	n/a	n/a	VE3165

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD28260-1, TD28260-2, TD28260-3, TD28260-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

Blank Spike Summary

Job Number: TD28260
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3165-BS	E0071061.D	1	10/09/18	FI	n/a	n/a	VE3165

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD28260-1, TD28260-2, TD28260-3, TD28260-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	130	104	46-129
71-43-2	Benzene	25	23.2	93	68-119
107-06-2	1,2-Dichloroethane	25	22.4	90	68-121
100-41-4	Ethylbenzene	25	25.1	100	71-117
97-63-2	Ethyl methacrylate	25	25.2	101	59-118
78-83-1	Isobutyl alcohol	250	207	83	22-162
80-62-6	Methyl methacrylate	25	24.0	96	53-135
78-93-3	Methyl ethyl ketone	125	108	86	51-129
108-88-3	Toluene	25	23.8	95	73-119
1330-20-7	Xylene (total)	75	75.1	100	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	94%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD28260
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD28260-1MS	E0071066.D	1	10/09/18	FI	n/a	n/a	VE3165
TD28260-1MSD	E0071067.D	1	10/09/18	FI	n/a	n/a	VE3165
TD28260-1	E0071065.D	1	10/09/18	FI	n/a	n/a	VE3165

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD28260-1, TD28260-2, TD28260-3, TD28260-4

CAS No.	Compound	TD28260-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	117	94	125	120	96	3	46-129/25
71-43-2	Benzene	1.0	U	25	22.8	91	25	22.0	88	4	68-119/12
107-06-2	1,2-Dichloroethane	1.7		25	23.7	88	25	23.4	87	1	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	23.9	96	25	24.5	98	2	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	24.2	97	25	24.7	99	2	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	213	85	250	219	88	3	22-162/30
80-62-6	Methyl methacrylate	10	U	25	20.5	82	25	20.6	82	0	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	103	82	125	104	83	1	51-129/22
108-88-3	Toluene	1.0	U	25	22.8	91	25	23.5	94	3	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	71.8	96	75	73.5	98	2	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD28260-1	Limits
1868-53-7	Dibromofluoromethane	100%	99%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	90%	97%	68-124%
2037-26-5	Toluene-D8	99%	98%	99%	80-119%
460-00-4	4-Bromofluorobenzene	97%	97%	99%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD28260
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47513-MB	W30773.D	1	10/09/18	ZT	10/09/18	OP47513	EW1652

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD28260-1, TD28260-2, TD28260-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	39%	10-66%
4165-62-2	Phenol-d5	37%	10-63%
118-79-6	2,4,6-Tribromophenol	93%	32-128%
4165-60-0	Nitrobenzene-d5	96%	29-115%
321-60-8	2-Fluorobiphenyl	96%	34-113%
1718-51-0	Terphenyl-d14	98%	23-138%

Blank Spike Summary

Job Number: TD28260
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47513-BS	W30774.D	1	10/09/18	ZT	10/09/18	OP47513	EW1652

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD28260-1, TD28260-2, TD28260-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	36.8	74	39-107
	Cresol, Total	100	50.3	50	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	32%	10-66%
4165-62-2	Phenol-d5	32%	10-63%
118-79-6	2,4,6-Tribromophenol	81%	32-128%
4165-60-0	Nitrobenzene-d5	77%	29-115%
321-60-8	2-Fluorobiphenyl	77%	34-113%
1718-51-0	Terphenyl-d14	82%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD28260
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47513-MS	W30776.D	1	10/09/18	ZT	10/09/18	OP47513	EW1652
OP47513-MSD	W30777.D	1	10/09/18	ZT	10/09/18	OP47513	EW1652
TD28260-1	W30775.D	1	10/09/18	ZT	10/09/18	OP47513	EW1652

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD28260-1, TD28260-2, TD28260-3

CAS No.	Compound	TD28260-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0 U		50	32.5	65	50	37.1	74	13	39-107/32
	Cresol, Total	5.0 U		100	44.5	45*	100	50.3	50	12	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD28260-1	Limits
367-12-4	2-Fluorophenol	27%	31%	31%	10-66%
4165-62-2	Phenol-d5	27%	30%	29%	10-63%
118-79-6	2,4,6-Tribromophenol	78%	79%	86%	32-128%
4165-60-0	Nitrobenzene-d5	69%	77%		29-115%
321-60-8	2-Fluorobiphenyl	71%	77%		34-113%
1718-51-0	Terphenyl-d14	81%	78%		23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD28260
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN93301	TD28260-1	su	6.90	6.90	0.0	0-10%

Associated Samples:
Batch GN93301: TD28260-1, TD28260-2, TD28260-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD29087

Sampling Date: 10/17/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **36**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD29087

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29087-1	10/17/18	14:25		10/18/18	AQ	Water	SA-E-20181017
TD29087-2	10/17/18	14:40		10/18/18	AQ	Water	SA-I-20181017
TD29087-2D	10/17/18	14:40		10/18/18	AQ	Water Dup/MSD	SA-I-20181017 MSD
TD29087-2S	10/17/18	14:40		10/18/18	AQ	Water Matrix Spike	SA-I-20181017 MS
TD29087-3	10/17/18	00:00		10/18/18	AQ	Water	FIELD DUPLICATE
TD29087-4	10/17/18	00:00		10/18/18	AQ	Trip Blank Water	TB-01-2018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29087

Site: DOWMIM (Jacobs) **Report Date** 11/1/2018 5:33:25 PM

3 Samples and 1 Trip Blank were collected on 10/17/2018 and received intact at SGS North America Inc (SGS) on 10/18/2018 and properly preserved in 1 cooler at 1.8 Deg C. The samples received an Accutest job number of TD29087. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5972

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29087-2MS, TD29087-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47642

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29087-2MS, TD29087-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matric Spike Duplicate Recovery for Cresol, Total is outside control limits. Control limits are advisory
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN93742

- Sample TD29140-1DUP was used as the QC sample for pH.
- TD29087-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 18.2 C.
- TD29087-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 18.4 C.
- TD29087-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 18.4 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29087
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/17/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29087-1	**SA-E-20181017**					
1,2-Dichloroethane		0.0019	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		7.27			su	SM 4500H+ B-2011
TD29087-2	**SA-I-20181017**					
1,2-Dichloroethane		0.0189	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		6.07			su	SM 4500H+ B-2011
TD29087-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0019	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		7.34			su	SM 4500H+ B-2011
TD29087-4	**TB-01-2018**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 18.4 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 18.2 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181017		
Lab Sample ID:	TD29087-1	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70310.D	1	10/24/18 16:17	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0019	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181017		
Lab Sample ID:	TD29087-1	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30989.D	1	10/24/18 12:06	ZT	10/23/18 13:10	OP47642	EW1664
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	76%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181017		
Lab Sample ID:	TD29087-1	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.27		su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 18.4 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181017		
Lab Sample ID:	TD29087-2	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70297.D	1	10/24/18 10:59	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0189	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SA-I-20181017
Lab Sample ID: TD29087-2
Matrix: AQ - Water
Method: SW846 8270D SW846 3510C
Project: DOWMIM (Jacobs)

Date Sampled: 10/17/18
Date Received: 10/18/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30986.D	1	10/24/18 10:47	ZT	10/23/18 13:10	OP47642	EW1664
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	24%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	79%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181017		
Lab Sample ID:	TD29087-2	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.07		su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 18.2 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD29087-3	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70311.D	1	10/24/18 16:41	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0019	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD29087-3	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30990.D	1	10/24/18 12:33	ZT	10/23/18 13:10	OP47642	EW1664
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	82%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD29087-3	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.34		su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 18.4 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-2018		
Lab Sample ID:	TD29087-4	**Date Sampled:**	10/17/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70302.D	1	10/24/18 13:02	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # TD29087

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Ahf Harn Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)
Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-2018 1017	~~10/17/18~~	1425		WW	6	3					3							X	X	X	
2	SA-I-2018 1017	10/17/18	1440		WW	6	3					3							X	X	X	
3	Field Duplicate	10/17/18	—		WW	6	3					3							X	X	X	
2	MS/MSD for sample SA-I-2018 1017	10/17/18	—		WW	10	6					4							X	X		
4	TB-01-2018	10/17/18	—		TB	2	2												X			

TAGGED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 -*B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate
** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1 [signature]	10/18/18	1 [signature]	10-18-18 7:57	2 [signature]	10-18-18 12:25	2 [signature]	1225 10/18/18
3	757	3		4		4	
5		5					

Custody Seal # ☐ Intact ☐ Not intact Preserved where applicable ☐ On ice ☐ Cooler Temp.

TD29087: Chain of Custody
Page 1 of 5

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SGS 18 of 36
TD29087

SGS

COOLER TEMP FORM

SGS JOB# TD29087

Delivered by (circle one): FedEx/UPS (ALGC Driver) Client

Date: 10/31/18

Client:

Cooler Number: 1

Thermometer ID: IR3

CF, °C 0

Corrected Temp, °C 1.8

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/23/19

5.1 5

TD29087: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD29087 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.8/1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD29087 **Date / Time Received:** 10/18/2018 12:25:00 PM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29087-1	LAG	1	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-1	LAG	2	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-1	250ml	3	3H	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	LAG	1	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	LAG	2	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	250ml	3	3H	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	LAG	7	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	LAG	8	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	LAG	12	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	LAG	13	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-3	LAG	1	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8

Sample Receipt Log

Job #: TD29087 **Date / Time Received:** 10/18/2018 12:25:00 PM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29087-3	LAG	2	4EE	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-3	250ml	3	3H	N/P	Note #2 - Preservative check not applicable.	IR-3	1.8	0	1.8
1	TD29087-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD29087-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8

Appendix A Laboratory Data Package Cover Page

TD29087 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/1/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**11/1/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29087**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN93742, OP47642, VZ5972**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/1/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29087				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN93742, OP47642, VZ5972				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/1/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29087**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN93742, OP47642, VZ5972**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29087
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5972-MB	Z70296.D	1	10/24/18	FT	n/a	n/a	VZ5972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29087-1, TD29087-2, TD29087-3, TD29087-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

Blank Spike Summary

Job Number: TD29087
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5972-BS	Z70293.D	1	10/24/18	FT	n/a	n/a	VZ5972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29087-1, TD29087-2, TD29087-3, TD29087-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	92.5	74	46-129
71-43-2	Benzene	25	22.3	89	68-119
107-06-2	1,2-Dichloroethane	25	22.3	89	68-121
100-41-4	Ethylbenzene	25	24.3	97	71-117
97-63-2	Ethyl methacrylate	25	26.4	106	59-118
78-83-1	Isobutyl alcohol	250	283	113	22-162
80-62-6	Methyl methacrylate	25	26.1	104	53-135
78-93-3	Methyl ethyl ketone	125	102	82	51-129
108-88-3	Toluene	25	23.3	93	73-119
1330-20-7	Xylene (total)	75	72.6	97	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29087
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29087-2MS	Z70298.D	1	10/24/18	FT	n/a	n/a	VZ5972
TD29087-2MSD	Z70299.D	1	10/24/18	FT	n/a	n/a	VZ5972
TD29087-2	Z70297.D	1	10/24/18	FT	n/a	n/a	VZ5972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29087-1, TD29087-2, TD29087-3, TD29087-4

CAS No.	Compound	TD29087-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	92.9	74	125	96.4	77	4	46-129/25
71-43-2	Benzene	1.0	U	25	21.4	86	25	22.4	90	5	68-119/12
107-06-2	1,2-Dichloroethane	18.9		25	41.3	90	25	42.3	94	2	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	23.2	93	25	24.4	98	5	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	26.1	104	25	27.8	111	6	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	253	101	250	277	111	9	22-162/30
80-62-6	Methyl methacrylate	10	U	25	25.9	104	25	27.2	109	5	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	102	82	125	108	86	6	51-129/22
108-88-3	Toluene	1.0	U	25	21.9	88	25	23.1	92	5	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	69.5	93	75	72.7	97	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD29087-2	Limits
1868-53-7	Dibromofluoromethane	97%	97%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	100%	68-124%
2037-26-5	Toluene-D8	100%	99%	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	101%	104%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29087
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47642-MB	W30984.D	1	10/24/18	ZT	10/23/18	OP47642	EW1664

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD29087-1, TD29087-2, TD29087-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	33%	10-66%
4165-62-2	Phenol-d5	22%	10-63%
118-79-6	2,4,6-Tribromophenol	93%	32-128%
4165-60-0	Nitrobenzene-d5	80%	29-115%
321-60-8	2-Fluorobiphenyl	82%	34-113%
1718-51-0	Terphenyl-d14	97%	23-138%

Blank Spike Summary

Job Number: TD29087
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47642-BS	W30985.D	1	10/24/18	ZT	10/23/18	OP47642	EW1664

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD29087-1, TD29087-2, TD29087-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	33.2	66	39-107
	Cresol, Total	100	49.3	49*	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	28%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	78%	32-128%
4165-60-0	Nitrobenzene-d5	67%	29-115%
321-60-8	2-Fluorobiphenyl	73%	34-113%
1718-51-0	Terphenyl-d14	78%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29087
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47642-MS	W30987.D	1	10/24/18	ZT	10/23/18	OP47642	EW1664
OP47642-MSD	W30988.D	1	10/24/18	ZT	10/23/18	OP47642	EW1664
TD29087-2	W30986.D	1	10/24/18	ZT	10/23/18	OP47642	EW1664

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD29087-1, TD29087-2, TD29087-3

CAS No.	Compound	TD29087-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0 U		50	35.5	71	50	33.5	67	6	39-107/32
	Cresol, Total	5.0 U		100	50.5	51	100	47.2	47*	7	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD29087-2	Limits
367-12-4	2-Fluorophenol	28%	26%	24%	10-66%
4165-62-2	Phenol-d5	19%	18%	16%	10-63%
118-79-6	2,4,6-Tribromophenol	84%	80%	79%	32-128%
4165-60-0	Nitrobenzene-d5	73%	65%		29-115%
321-60-8	2-Fluorobiphenyl	80%	74%		34-113%
1718-51-0	Terphenyl-d14	84%	82%		23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD29087
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN93742	TD29140-1	su	9.57	9.57	0.0	0-10%

Associated Samples:
Batch GN93742: TD29087-1, TD29087-2, TD29087-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD29736

Sampling Date: 10/31/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 39

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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Test results relate only to samples analyzed.

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD29736

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29736-1	10/31/18	10:30		10/31/18	AQ	Water	SA-E-20181031
TD29736-2	10/31/18	10:55		10/31/18	AQ	Water	SA-I-20181031
TD29736-2D	10/31/18	10:55		10/31/18	AQ	Water Dup/MSD	SA-I-20181031 MSD
TD29736-2S	10/31/18	10:55		10/31/18	AQ	Water Matrix Spike	SA-I-20181031 MS
TD29736-3	10/31/18	00:00		10/31/18	AQ	Water	FIELD DUPLICATE
TD29736-4	10/31/18	00:00		10/31/18	AQ	Trip Blank Water	TB-01-2018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29736

Site: DOWMIM (Jacobs) **Report Date** 11/13/2018 6:03:46 P

3 Samples and 1 Trip Blank were collected on 10/31/2018 and received intact at SGS North America Inc (SGS) on 10/31/2018 and properly preserved in 1 cooler at 3.3 Deg C. The samples received an Accutest job number of TD29736. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE3211

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD29894-1MS, TD29894-1MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery for Ethyl methacrylate is outside control limits. Probable cause due to matrix interference.

Matrix: AQ **Batch ID:** VE3213

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29736-2MS, TD29736-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47803

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29736-2MS, TD29736-2MSD were used as the QC samples indicated.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN94020

- Sample TD29688-1DUP was used as the QC sample for pH.
- TD29736-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.9 C.
- TD29736-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.8 C.
- TD29736-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.5 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29736
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/31/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29736-1	**SA-E-20181031**					
1,2-Dichloroethane		0.0040	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		7.37			su	SM 4500H+ B-2011
TD29736-2	**SA-I-20181031**					
1,2-Dichloroethane		0.0221	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		5.94			su	SM 4500H+ B-2011
TD29736-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0040	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		7.22			su	SM 4500H+ B-2011
TD29736-4	**TB-01-2018**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.5 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 21.8 c
(c) Field analysis required. Received out of hold time and analyzed by request. temp. 21.9 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181031		
Lab Sample ID:	TD29736-1	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071958.D	1	11/07/18 17:02	FI	n/a	n/a	VE3211
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0040	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181031		
Lab Sample ID:	TD29736-1	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27584.D	1	11/08/18 12:57	ZT	11/07/18 07:30	OP47803	EO1563
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-66%
4165-62-2	Phenol-d5	15%		10-63%
118-79-6	2,4,6-Tribromophenol	73%		32-128%
4165-60-0	Nitrobenzene-d5	62%		29-115%
321-60-8	2-Fluorobiphenyl	65%		34-113%
1718-51-0	Terphenyl-d14	81%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181031		
Lab Sample ID:	TD29736-1	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.37		su	1	11/01/18 17:30	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.5 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181031		
Lab Sample ID:	TD29736-2	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071970.D	1	11/07/18 21:52	FI	n/a	n/a	VE3213
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0221	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181031		
Lab Sample ID:	TD29736-2	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27581.D	1	11/08/18 11:27	ZT	11/07/18 07:30	OP47803	EO1563
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	79%		32-128%
4165-60-0	Nitrobenzene-d5	68%		29-115%
321-60-8	2-Fluorobiphenyl	70%		34-113%
1718-51-0	Terphenyl-d14	80%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181031		
Lab Sample ID:	TD29736-2	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.94		su	1	11/01/18 17:30	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.8 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD29736-3	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071959.D	1	11/07/18 17:26	FI	n/a	n/a	VE3211
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0040	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FIELD DUPLICATE
Lab Sample ID: TD29736-3
Matrix: AQ - Water
Method: SW846 8270D SW846 3510C
Project: DOWMIM (Jacobs)

Date Sampled: 10/31/18
Date Received: 10/31/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27585.D	1	11/08/18 13:27	ZT	11/07/18 07:30	OP47803	EO1563
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	80%		32-128%
4165-60-0	Nitrobenzene-d5	67%		29-115%
321-60-8	2-Fluorobiphenyl	72%		34-113%
1718-51-0	Terphenyl-d14	81%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD29736-3	**Date Sampled:**	10/31/18
Matrix:	AQ - Water	**Date Received:**	10/31/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.22		su	1	11/01/18 17:30	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.9 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-2018		
Lab Sample ID:	TD29736-4	**Date Sampled:**	10/31/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/31/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0071957.D	1	11/07/18 16:38	FI	n/a	n/a	VE3211
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL 713-271-4700 FAX 713-271-4770
www.sgs.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD29736

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hadi Phone #: 8324899610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH
1	SA-E-2018 1031	10/31/18	10:30		WW	6	3					3							X	X	X
2	SA-I-2018 1031	10/31/18	10:55		WW	6	3					3							X	X	X
3	Field Duplicate	10/31/18			WW	6	3					3							X	X	X
4	MS/MSD for sample SA-I-2018 1031	10/31/18			WW	10	6					4							X	X	
4	TB-01-2018	10/31/18			TB	2	2												X		

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

LAB USE ONLY

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Form SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	10/31/18 1612			2		2	
Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
3		3		4		4	
Relinquished by:	Date Time:	Received By:	Date Time:	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp.
5		5					

5.1 5

TD29736: Chain of Custody
Page 1 of 5

SGS

COOLER TEMP FORM

SGS JOB#

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 10.31.13

Client:

Cooler Number: 1

Thermometer ID: IR23 CF, °C 0 Corrected Temp, °C 3.3

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

5.1

5

TD29736: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD29736 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (3.3/3.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD29736 **Date / Time Received:** 10/31/2018 **Initials:** BG

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD29736-1	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.				
	TD29736-1	LAG	2	4LL	N/P	Note #2 - Preservative check not applicable.				
	TD29736-1	LAG	3	4LL	N/P	Note #2 - Preservative check not applicable.				
	TD29736-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	LAG	1	4LL	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	LAG	2	4LL	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	250ml	3	3L	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	LAG	7	4LL	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	LAG	8	4LL	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	LAG	12	4LL	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	LAG	13	4LL	N/P	Note #2 - Preservative check not applicable.				
1	TD29736-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD29736-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-3	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.				

Sample Receipt Log

Job #: TD29736 **Date / Time Received:** 10/31/2018 **Initials:** BG

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD29736-3	LAG	2	4LL	N/P	Note #2 - Preservative check not applicable.				
	TD29736-3	LAG	3	4LL	N/P	Note #2 - Preservative check not applicable.				
	TD29736-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD29736-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD29736 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/13/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/13/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29736**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN94020, OP47803, VE3211, VE3213**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?		X			**2**
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			**2**
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X			**2**
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/13/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29736				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	GN94020, OP47803, VE3211, VE3213				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/13/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29736**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN94020, OP47803, VE3211, VE3213**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3211-MB	E0071939.D	1	11/07/18	FI	n/a	n/a	VE3211

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29736-1, TD29736-3, TD29736-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	96%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

Method Blank Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3213-MB	E0071969.D	1	11/07/18	FI	n/a	n/a	VE3213

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29736-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	103%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

Blank Spike Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3211-BS	E0071936.D	1	11/07/18	FI	n/a	n/a	VE3211

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29736-1, TD29736-3, TD29736-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	104	83	46-129
71-43-2	Benzene	25	21.9	88	68-119
107-06-2	1,2-Dichloroethane	25	21.2	85	68-121
100-41-4	Ethylbenzene	25	26.5	106	71-117
97-63-2	Ethyl methacrylate	25	28.0	112	59-118
78-83-1	Isobutyl alcohol	250	242	97	22-162
80-62-6	Methyl methacrylate	25	25.2	101	53-135
78-93-3	Methyl ethyl ketone	125	113	90	51-129
108-88-3	Toluene	25	23.6	94	73-119
1330-20-7	Xylene (total)	75	79.4	106	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3213-BS	E0071965.D	1	11/07/18	FI	n/a	n/a	VE3213

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29736-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	127	102	46-129
71-43-2	Benzene	25	26.5	106	68-119
107-06-2	1,2-Dichloroethane	25	26.2	105	68-121
100-41-4	Ethylbenzene	25	28.0	112	71-117
97-63-2	Ethyl methacrylate	25	28.3	113	59-118
78-83-1	Isobutyl alcohol	250	251	100	22-162
80-62-6	Methyl methacrylate	25	27.7	111	53-135
78-93-3	Methyl ethyl ketone	125	118	94	51-129
108-88-3	Toluene	25	26.8	107	73-119
1330-20-7	Xylene (total)	75	84.2	112	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29894-1MS	E0071943.D	2	11/07/18	FI	n/a	n/a	VE3211
TD29894-1MSD	E0071944.D	2	11/07/18	FI	n/a	n/a	VE3211
TD29894-1	E0071946.D	1	11/07/18	FI	n/a	n/a	VE3211
TD29894-1 [a]	E0071942.D	2	11/07/18	FI	n/a	n/a	VE3211

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29736-1, TD29736-3, TD29736-4

CAS No.	Compound	TD29894-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	221	88	250	212	85	4	46-129/25
71-43-2	Benzene	0.81	J	50	45.0	88	50	45.7	90	2	68-119/12
107-06-2	1,2-Dichloroethane	152		50	192	80	50	186	68	3	68-121/12
100-41-4	Ethylbenzene	ND		50	52.9	106	50	54.9	110	4	71-117/12
97-63-2	Ethyl methacrylate	ND		50	56.9	114	50	59.6	119*	5	59-118/19
78-83-1	Isobutyl alcohol	ND		500	541	108	500	558	112	3	22-162/30
80-62-6	Methyl methacrylate	ND		50	53.8	108	50	56.0	112	4	53-135/21
78-93-3	Methyl ethyl ketone	ND		250	254	102	250	259	104	2	51-129/22
108-88-3	Toluene	ND		50	47.6	95	50	49.2	98	3	73-119/13
1330-20-7	Xylene (total)	ND		150	160	107	150	165	110	3	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD29894-1	TD29894-1	Limits
1868-53-7	Dibromofluoromethane	100%	99%	100%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	94%	96%	96%	68-124%
2037-26-5	Toluene-D8	99%	101%	101%	99%	80-119%
460-00-4	4-Bromofluorobenzene	100%	100%	98%	99%	72-126%

(a) Sample used for QC purposes only.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29736-2MS	E0071971.D	1	11/07/18	FI	n/a	n/a	VE3213
TD29736-2MSD	E0071972.D	1	11/07/18	FI	n/a	n/a	VE3213
TD29736-2	E0071970.D	1	11/07/18	FI	n/a	n/a	VE3213

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29736-2

CAS No.	Compound	TD29736-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50 U		125	122	98	125	127	102	4	46-129/25
71-43-2	Benzene	1.0 U		25	25.9	104	25	25.9	104	0	68-119/12
107-06-2	1,2-Dichloroethane	22.1		25	48.4	105	25	47.2	100	3	68-121/12
100-41-4	Ethylbenzene	1.0 U		25	28.0	112	25	27.7	111	1	71-117/12
97-63-2	Ethyl methacrylate	10 U		25	28.0	112	25	27.9	112	0	59-118/19
78-83-1	Isobutyl alcohol	200 U		250	243	97	250	246	98	1	22-162/30
80-62-6	Methyl methacrylate	10 U		25	27.2	109	25	26.9	108	1	53-135/21
78-93-3	Methyl ethyl ketone	10 U		125	125	100	125	118	94	6	51-129/22
108-88-3	Toluene	1.0 U		25	26.3	105	25	26.2	105	0	73-119/13
1330-20-7	Xylene (total)	1.0 U		75	83.8	112	75	83.2	111	1	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD29736-2	Limits
1868-53-7	Dibromofluoromethane	101%	101%	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	100%	103%	68-124%
2037-26-5	Toluene-D8	101%	100%	101%	80-119%
460-00-4	4-Bromofluorobenzene	102%	101%	99%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47803-MB	O27578.D	1	11/08/18	ZT	11/07/18	OP47803	EO1563

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD29736-1, TD29736-2, TD29736-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	31%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	94%	32-128%
4165-60-0	Nitrobenzene-d5	76%	29-115%
321-60-8	2-Fluorobiphenyl	83%	34-113%
1718-51-0	Terphenyl-d14	104%	23-138%

Blank Spike Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47803-BS	O27579.D	1	11/08/18	ZT	11/07/18	OP47803	EO1563

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD29736-1, TD29736-2, TD29736-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	31.2	62	39-107
	Cresol, Total	100	42.9	43*	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	25%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	76%	32-128%
4165-60-0	Nitrobenzene-d5	62%	29-115%
321-60-8	2-Fluorobiphenyl	68%	34-113%
1718-51-0	Terphenyl-d14	72%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29736
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47803-MS	O27582.D	1	11/08/18	ZT	11/07/18	OP47803	EO1563
OP47803-MSD	O27583.D	1	11/08/18	ZT	11/07/18	OP47803	EO1563
TD29736-2	O27581.D	1	11/08/18	ZT	11/07/18	OP47803	EO1563

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD29736-1, TD29736-2, TD29736-3

CAS No.	Compound	TD29736-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	31.9	64	50	34.3	69	7	39-107/32
	Cresol, Total	5.0	U	100	41.4	41*	100	47.5	48*	14	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD29736-2	Limits
367-12-4	2-Fluorophenol	26%	30%	27%	10-66%
4165-62-2	Phenol-d5	17%	20%	17%	10-63%
118-79-6	2,4,6-Tribromophenol	80%	83%	79%	32-128%
4165-60-0	Nitrobenzene-d5	65%	70%	68%	29-115%
321-60-8	2-Fluorobiphenyl	70%	73%	70%	34-113%
1718-51-0	Terphenyl-d14	74%	78%	80%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD29736
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN94020	TD29688-1	su	7.03	7.03	0.0	0-10%

Associated Samples:
Batch GN94020: TD29736-1, TD29736-2, TD29736-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD30451

Sampling Date: 11/13/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **36**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD30451

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD30451-1	11/13/18	12:30		11/13/18	AQ	Water	SA-E-20181113
TD30451-2	11/13/18	12:00		11/13/18	AQ	Water	SA-I-20181113
TD30451-2D	11/13/18	12:00		11/13/18	AQ	Water Dup/MSD	SA-I-20181113 MSD
TD30451-2S	11/13/18	12:00		11/13/18	AQ	Water Matrix Spike	SA-I-20181113 MS
TD30451-3	11/13/18	00:00		11/13/18	AQ	Water	FIELD DUPLICATE
TD30451-4	11/13/18	00:00		11/13/18	AQ	Trip Blank Water	TB-01-20181113

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD30451

Site: DOWMIM (Jacobs) **Report Date** 11/27/2018 1:08:20 P

3 Samples and 1 Trip Blank were collected on 11/13/2018 and received intact at SGS North America Inc (SGS) on 11/13/2018 and properly preserved in 1 cooler at 1.8 Deg C. The samples received an Accutest job number of TD30451. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1923

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD30451-2MS, TD30451-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- TD30451-1, TD30451-2, TD30451-3, TD30451-4 for Acetone: CCV recovery was above method acceptance criteria. This target analyte was not detected in the samples.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47890

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD30451-2MS, TD30451-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN94352

- Sample TD30451-1DUP was used as the QC sample for pH.
- TD30451-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.7 C.
- TD30451-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.9 C.
- TD30451-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.9 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD30451
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 11/13/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD30451-1	**SA-E-20181113**					
1,2-Dichloroethane		0.0022	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		7.14			su	SM 4500H+ B-2011
TD30451-2	**SA-I-20181113**					
1,2-Dichloroethane		0.0232	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		5.71			su	SM 4500H+ B-2011
TD30451-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0028	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		7.12			su	SM 4500H+ B-2011
TD30451-4	**TB-01-20181113**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.9 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp. 20.7 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181113		
Lab Sample ID:	TD30451-1	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479092.D	1	11/17/18 15:05	FI	n/a	n/a	VR1923
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0022	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	117%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181113		
Lab Sample ID:	TD30451-1	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27668.D	1	11/16/18 13:34	ZT	11/15/18 15:30	OP47890	EO1568
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-66%
4165-62-2	Phenol-d5	21%		10-63%
118-79-6	2,4,6-Tribromophenol	90%		32-128%
4165-60-0	Nitrobenzene-d5	80%		29-115%
321-60-8	2-Fluorobiphenyl	87%		34-113%
1718-51-0	Terphenyl-d14	87%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181113		
Lab Sample ID:	TD30451-1	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.14		su	1	11/14/18 14:40	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.9 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181113		
Lab Sample ID:	TD30451-2	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479088.D	1	11/17/18 13:18	FI	n/a	n/a	VR1923
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0232	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	119%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181113		
Lab Sample ID:	TD30451-2	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27663.D	1	11/16/18 11:03	ZT	11/15/18 15:30	OP47890	EO1568
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		10-66%
4165-62-2	Phenol-d5	18%		10-63%
118-79-6	2,4,6-Tribromophenol	86%		32-128%
4165-60-0	Nitrobenzene-d5	79%		29-115%
321-60-8	2-Fluorobiphenyl	84%		34-113%
1718-51-0	Terphenyl-d14	84%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181113		
Lab Sample ID:	TD30451-2	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.71		su	1	11/14/18 14:40	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.9 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD30451-3	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479093.D	1	11/17/18 15:31	FI	n/a	n/a	VR1923
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0028	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	120%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FIELD DUPLICATE
Lab Sample ID: TD30451-3
Matrix: AQ - Water
Method: SW846 8270D SW846 3510C
Project: DOWMIM (Jacobs)

Date Sampled: 11/13/18
Date Received: 11/13/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O27669.D	1	11/16/18 14:04	ZT	11/15/18 15:30	OP47890	EO1568
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	28%		10-66%
4165-62-2	Phenol-d5	18%		10-63%
118-79-6	2,4,6-Tribromophenol	86%		32-128%
4165-60-0	Nitrobenzene-d5	74%		29-115%
321-60-8	2-Fluorobiphenyl	83%		34-113%
1718-51-0	Terphenyl-d14	83%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD30451-3	**Date Sampled:**	11/13/18
Matrix:	AQ - Water	**Date Received:**	11/13/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.12		su	1	11/14/18 14:40	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.7 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-20181113		
Lab Sample ID:	TD30451-4	**Date Sampled:**	11/13/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	11/13/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479084.D	1	11/17/18 11:31	FI	n/a	n/a	VR1923
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE ___ OF ___

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD30451

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston | State: Texas | Zip: 77072
Project Contact: John Ynfante | E-mail:
Phone #: 281-414-1719 | Fax #:
Sampler(s) Name(s): AH/Hair | Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: | State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: | State: | Zip:
Attention:

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-2018 1113	11/13/18	12:30	AH	WW	6	3					3							X	X	X	
2	SA-I-2018 1113	11/13/18	12:00	AH	WW	6	3					3							X	X	X	
3	Field Duplicate	11/13/18	NA	AH	WW	6	3					3							X	X	X	
2	MS/MSD for sample SA-I-2018 1113	11/13/18	12:00	AH	WW	10	6					4							X	X		
4	TB-01-2018 1113	11/13/18		AH	TB	2	2												X			

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate
** 2,4-Dimethylphenol, Total Cresols

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	AH	11/13/18 16:45	1		2		2	
3			3		4		4	
5			5		Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp.

5.1 5

TD30451: Chain of Custody
Page 1 of 5

SGS

COOLER TEMP FORM

TC# TD30451

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 11-13-18

Client: Jacobs

Cooler Number: 1

Thermometer ID: DR9 CF, °C 0 Corrected Temp, °C 1.8

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

TD30451: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD30451 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.8/1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD30451 **Date / Time Received:** 11/13/2018 2:30:00 PM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30451-1	LAG	1	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-1	LAG	2	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-1	250ml	3	3P	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	LAG	1	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	LAG	2	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	250ml	3	3P	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	LAG	7	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	LAG	8	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	LAG	12	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	LAG	13	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-3	LAG	1	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8

Sample Receipt Log

Job #: TD30451 **Date / Time Received:** 11/13/2018 2:30:00 PM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30451-3	LAG	2	4QQ	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-3	250ml	3	3P	N/P	Note #2 - Preservative check not applicable.	IR9	1.8	0	1.8
1	TD30451-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD30451-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8

Appendix A Laboratory Data Package Cover Page

TD30451 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/27/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/27/2018					
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD30451					
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN94352, OP47890, VR1923					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	OI	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	OI	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	OI	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	O	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	OI	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	OI	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	OI	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	OI	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	OI	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/27/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD30451				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN94352, OP47890, VR1923				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?			X			2
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/27/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD30451**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN94352, OP47890, VR1923**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD30451
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-MB	R03479083.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD30451-1, TD30451-2, TD30451-3, TD30451-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

Blank Spike Summary

Job Number: TD30451
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-BS	R03479079.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD30451-1, TD30451-2, TD30451-3, TD30451-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	140	112	46-129
71-43-2	Benzene	25	22.4	90	68-119
107-06-2	1,2-Dichloroethane	25	24.6	98	68-121
100-41-4	Ethylbenzene	25	23.6	94	71-117
97-63-2	Ethyl methacrylate	25	26.7	107	59-118
78-83-1	Isobutyl alcohol	250	261	104	22-162
80-62-6	Methyl methacrylate	25	27.3	109	53-135
78-93-3	Methyl ethyl ketone	125	118	94	51-129
108-88-3	Toluene	25	22.2	89	73-119
1330-20-7	Xylene (total)	75	71.2	95	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	111%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30451
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30451-2MS	R03479089.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2MSD	R03479090.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2	R03479088.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD30451-1, TD30451-2, TD30451-3, TD30451-4

CAS No.	Compound	TD30451-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	128	102	125	129	103	1	46-129/25
71-43-2	Benzene	1.0	U	25	21.2	85	25	20.5	82	3	68-119/12
107-06-2	1,2-Dichloroethane	23.2		25	48.8	102	25	46.5	93	5	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	22.5	90	25	21.3	85	5	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	24.0	96	25	23.8	95	1	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	234	94	250	244	98	4	22-162/30
80-62-6	Methyl methacrylate	10	U	25	25.9	104	25	24.7	99	5	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	108	86	125	106	85	2	51-129/22
108-88-3	Toluene	1.0	U	25	20.5	82	25	19.8	79	3	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	68.0	91	75	64.6	86	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD30451-2	Limits
1868-53-7	Dibromofluoromethane	106%	106%	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	116%	113%	119%	68-124%
2037-26-5	Toluene-D8	98%	98%	98%	80-119%
460-00-4	4-Bromofluorobenzene	105%	101%	101%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD30451
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47890-MB	O27661.D	1	11/16/18	ZT	11/15/18	OP47890	EO1568

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD30451-1, TD30451-2, TD30451-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	30%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	82%	32-128%

Blank Spike Summary

Job Number: TD30451
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47890-BS	O27662.D	1	11/16/18	ZT	11/15/18	OP47890	EO1568

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD30451-1, TD30451-2, TD30451-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	35.0	70	39-107
	Cresol, Total	100	48.5	49*	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	31%	10-66%
4165-62-2	Phenol-d5	20%	10-63%
118-79-6	2,4,6-Tribromophenol	88%	32-128%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30451
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47890-MS	O27664.D	1	11/16/18	ZT	11/15/18	OP47890	EO1568
OP47890-MSD	O27665.D	1	11/16/18	ZT	11/15/18	OP47890	EO1568
TD30451-2	O27663.D	1	11/16/18	ZT	11/15/18	OP47890	EO1568

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD30451-1, TD30451-2, TD30451-3

CAS No.	Compound	TD30451-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	30.7	61	50	34.0	68	10	39-107/32
	Cresol, Total	5.0	U	100	43.1	43*	100	44.5	45*	3	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD30451-2	Limits
367-12-4	2-Fluorophenol	28%	29%	29%	10-66%
4165-62-2	Phenol-d5	17%	19%	18%	10-63%
118-79-6	2,4,6-Tribromophenol	75%	87%	86%	32-128%
4165-60-0	Nitrobenzene-d5			79%	29-115%
321-60-8	2-Fluorobiphenyl			84%	34-113%
1718-51-0	Terphenyl-d14			84%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD30451
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN94352	TD30451-1	su	7.14	7.14	0.0	0-10%

Associated Samples:
Batch GN94352: TD30451-1, TD30451-2, TD30451-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD31188

Sampling Date: 11/28/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com;
ATTN: Josh McFarlain

Total number of pages in report: 36

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD31188

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD31188-1	11/28/18	13:00		11/29/18	AQ	Water	SA-E-20181128
TD31188-2	11/28/18	13:30		11/29/18	AQ	Water	SA-I-20181128
TD31188-2D	11/28/18	13:30		11/29/18	AQ	Water Dup/MSD	SA-I-20181128 MSD
TD31188-2S	11/28/18	13:30		11/29/18	AQ	Water Matrix Spike	SA-I-20181128 MS
TD31188-3	11/28/18	00:00		11/29/18	AQ	Water	FIELD DUPLICATE
TD31188-4	11/28/18	00:00		11/29/18	AQ	Trip Blank Water	TB-01-2018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD31188

Site: DOWMIM (Jacobs) **Report Date** 12/13/2018 4:35:00 P

3 Samples and 1 Trip Blank were collected on 11/28/2018 and received intact at SGS North America Inc (SGS) on 11/29/2018 and properly preserved in 1 cooler at 0.5 Deg C. The samples received an Accutest job number of TD31188. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ6032

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD31188-2MS, TD31188-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP48018

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD31188-2MS, TD31188-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN94734

- Sample TD31188-1DUP was used as the QC sample for pH.
- TD31188-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.3 C.
- TD31188-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.3 C.
- TD31188-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 23.4 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD31188
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 11/28/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD31188-1	**SA-E-20181128**					
1,2-Dichloroethane		0.0038	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		6.43			su	SM 4500H+ B-2011
TD31188-2	**SA-I-20181128**					
1,2-Dichloroethane		0.0273	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		5.86			su	SM 4500H+ B-2011
TD31188-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0038	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		7.06			su	SM 4500H+ B-2011
TD31188-4	**TB-01-2018**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 23.3 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 23.4 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181128		
Lab Sample ID:	TD31188-1	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71361.D	1	11/30/18 14:11	FT	n/a	n/a	VZ6032
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0038	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181128		
Lab Sample ID:	TD31188-1	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W31393.D	1	12/04/18 13:20	ZT	12/03/18 14:30	OP48018	EW1688
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	21%		10-66%
4165-62-2	Phenol-d5	15%		10-63%
118-79-6	2,4,6-Tribromophenol	59%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181128		
Lab Sample ID:	TD31188-1	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.43		su	1	11/30/18 15:25	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 23.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181128		
Lab Sample ID:	TD31188-2	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71353.D	1	11/30/18 10:56	FT	n/a	n/a	VZ6032
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0273	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181128		
Lab Sample ID:	TD31188-2	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W31389.D	1	12/04/18 11:28	ZT	12/03/18 14:30	OP48018	EW1688
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	56%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181128		
Lab Sample ID:	TD31188-2	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.86		su	1	11/30/18 15:25	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 23.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD31188-3	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71362.D	1	11/30/18 14:35	FT	n/a	n/a	VZ6032
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0038	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD31188-3	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W31394.D	1	12/04/18 13:48	ZT	12/03/18 14:30	OP48018	EW1688
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	20%		10-66%
4165-62-2	Phenol-d5	13%		10-63%
118-79-6	2,4,6-Tribromophenol	55%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD31188-3	**Date Sampled:**	11/28/18
Matrix:	AQ - Water	**Date Received:**	11/29/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.06		su	1	11/30/18 15:25	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 23.4 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-2018		
Lab Sample ID:	TD31188-4	**Date Sampled:**	11/28/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	11/29/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71352.D	1	11/30/18 10:31	FT	n/a	n/a	VZ6032
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 OF 1

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #:
Bottle Order Control #:
SGS Accutest Quote #:
SGS Accutest Job #: TD31188

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hadi Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-2018 1128	11/28/18	13:00		WW	6	3					3							X	X	X	
2	SA-I-2018 1128	11/28/18	13:30		WW	6	3					3							X	X	X	
3	Field Duplicate	11/28/18	NG		WW	6	3					3							X	X	X	
2	MS/MSD for sample SA-I-2018 1128	11/28/18	1330		WW	10	6					4							X	X		
4	TB-01-2018	11/28/18			TB	2	2												X			

TAGGED BY

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Date Time:		Date Time:		Date Time:		Date Time:		Date Time:
Relinquished by Sampler: 1	11/29/18 1814	Received By: 1	11.29.18 0814	Relinquished By: 2		Received By: 2			
Relinquished by Sampler: 3		Received By: 3		Relinquished By: 4		Received By: 4			
Relinquished by: 5		Received By: 5		Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ]	Cooler Temp.	

SGS

COOLER TEMP FORM

TC# TD31188

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 11/29/16

Client:

Cooler Number:

Thermometer ID: IR3 CF, °C 0 Corrected Temp, °C 0.5

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

5.1 5

TD31188: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD31188 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (0.5/0.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD31188 **Date / Time Received:** 11/29/2018 8:14:00 AM **Initials:** BG

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD31188-1	LAG	1	4QQ	N/P	Note #2 - Preservative check not applicable.				
	TD31188-1	LAG	2	4QQ	N/P	Note #2 - Preservative check not applicable.				
	TD31188-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD31188-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD31188-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31188-2	LAG	1	4QQ	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	LAG	2	4QQ	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	250ml	3	3B	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	LAG	7	4QQ	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	LAG	8	4QQ	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	LAG	12	4QQ	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	LAG	13	4QQ	N/P	Note #2 - Preservative check not applicable.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
1	TD31188-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	0.5	0	0.5
	TD31188-3	LAG	1	4QQ	N/P	Note #2 - Preservative check not applicable.				
	TD31188-3	LAG	2	4QQ	N/P	Note #2 - Preservative check not applicable.				

Sample Receipt Log

Job #: TD31188 **Date / Time Received:** 11/29/2018 8:14:00 AM **Initials:** BG

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD31188-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD31188-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD31188-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD31188-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD31188-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD31188 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	12/13/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**12/13/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD31188**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN94734, OP48018, VZ6032**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	12/13/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD31188				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN94734, OP48018, VZ6032				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**12/13/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD31188**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN94734, OP48018, VZ6032**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD31188
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6032-MB	Z71351.D	1	11/30/18	FT	n/a	n/a	VZ6032

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31188-1, TD31188-2, TD31188-3, TD31188-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

Blank Spike Summary

Job Number: TD31188
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6032-BS	Z71348.D	1	11/30/18	FT	n/a	n/a	VZ6032

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31188-1, TD31188-2, TD31188-3, TD31188-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	108	86	46-129
71-43-2	Benzene	25	22.7	91	68-119
107-06-2	1,2-Dichloroethane	25	22.4	90	68-121
100-41-4	Ethylbenzene	25	23.7	95	71-117
97-63-2	Ethyl methacrylate	25	25.6	102	59-118
78-83-1	Isobutyl alcohol	250	262	105	22-162
80-62-6	Methyl methacrylate	25	26.0	104	53-135
78-93-3	Methyl ethyl ketone	125	116	93	51-129
108-88-3	Toluene	25	23.2	93	73-119
1330-20-7	Xylene (total)	75	71.2	95	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD31188
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD31188-2MS	Z71356.D	1	11/30/18	FT	n/a	n/a	VZ6032
TD31188-2MSD	Z71357.D	1	11/30/18	FT	n/a	n/a	VZ6032
TD31188-2	Z71353.D	1	11/30/18	FT	n/a	n/a	VZ6032

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31188-1, TD31188-2, TD31188-3, TD31188-4

CAS No.	Compound	TD31188-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	118	94	125	117	94	1	46-129/25
71-43-2	Benzene	1.0	U	25	23.1	92	25	23.0	92	0	68-119/12
107-06-2	1,2-Dichloroethane	27.3		25	49.6	89	25	49.2	88	1	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	24.1	96	25	24.0	96	0	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	26.7	107	25	27.2	109	2	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	279	112	250	262	105	6	22-162/30
80-62-6	Methyl methacrylate	10	U	25	27.0	108	25	27.7	111	3	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	125	100	125	126	101	1	51-129/22
108-88-3	Toluene	1.0	U	25	23.4	94	25	23.5	94	0	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	72.7	97	75	72.4	97	0	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD31188-2	Limits
1868-53-7	Dibromofluoromethane	99%	99%	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	99%	68-124%
2037-26-5	Toluene-D8	100%	101%	103%	80-119%
460-00-4	4-Bromofluorobenzene	99%	99%	101%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD31188
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48018-MB	W31387.D	1	12/04/18	ZT	12/03/18	OP48018	EW1688

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD31188-1, TD31188-2, TD31188-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	21%	10-66%
4165-62-2	Phenol-d5	14%	10-63%
118-79-6	2,4,6-Tribromophenol	57%	32-128%

Blank Spike Summary

Job Number: TD31188
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48018-BS	W31388.D	1	12/04/18	ZT	12/03/18	OP48018	EW1688

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD31188-1, TD31188-2, TD31188-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	36.8	74	39-107
	Cresol, Total	100	49.3	49*	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	31%	10-66%
4165-62-2	Phenol-d5	22%	10-63%
118-79-6	2,4,6-Tribromophenol	81%	32-128%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD31188
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48018-MS	W31390.D	1	12/04/18	ZT	12/03/18	OP48018	EW1688
OP48018-MSD	W31391.D	1	12/04/18	ZT	12/03/18	OP48018	EW1688
TD31188-2	W31389.D	1	12/04/18	ZT	12/03/18	OP48018	EW1688

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD31188-1, TD31188-2, TD31188-3

CAS No.	Compound	TD31188-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	27.0	54	50	26.6	53	1	39-107/32
	Cresol, Total	5.0	U	100	34.3	34*	100	34.4	34*	0	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD31188-2	Limits
367-12-4	2-Fluorophenol	21%	21%	19%	10-66%
4165-62-2	Phenol-d5	14%	14%	13%	10-63%
118-79-6	2,4,6-Tribromophenol	64%	58%	56%	32-128%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD31188
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN94734	TD31188-1	su	6.43	6.43	0.0	0-10%

Associated Samples:
Batch GN94734: TD31188-1, TD31188-2, TD31188-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD31886

Sampling Date: 12/12/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com;
ATTN: Josh McFarlain

Total number of pages in report: 37

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD31886

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD31886-1	12/12/18	11:30		12/12/18	AQ	Water	SA-E-20181212
TD31886-2	12/12/18	12:30		12/12/18	AQ	Water	SA-I-20181212
TD31886-2D	12/12/18	12:30		12/12/18	AQ	Water Dup/MSD	SA-I-20181212 MSD
TD31886-2S	12/12/18	12:30		12/12/18	AQ	Water Matrix Spike	SA-I-20181212 MS
TD31886-3	12/12/18	00:00		12/12/18	AQ	Water	FIELD DUPLICATE
TD31886-4	12/12/18	00:00		12/12/18	AQ	Trip Blank Water	TB-01-2018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Dow Chemical Company	**Job No**	TD31886
Site:	DOWMIM (Jacobs)	**Report Date**	12/26/2018 6:24:16 P

3 Samples and 1 Trip Blank were collected on 12/12/2018 and received intact at SGS North America Inc (SGS) on 12/12/2018 and properly preserved in 2 coolers at 5.4 and 5.6 Deg C. The samples received an Accutest job number of TD31886. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ6055

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD31886-2MS, TD31886-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP48166

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD31886-2MS, TD31886-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN95122

- Sample DA11883-1DUP was used as the QC sample for pH.
- TD31886-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 22.1 C.
- TD31886-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 22.2 C.
- TD31886-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 22.3 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD31886
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 12/12/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD31886-1	**SA-E-20181212**					
1,2-Dichloroethane		0.0041	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		7.43			su	SM 4500H+ B-2011
TD31886-2	**SA-I-20181212**					
1,2-Dichloroethane		0.0223	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		6.06			su	SM 4500H+ B-2011
TD31886-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0041	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		7.42			su	SM 4500H+ B-2011
TD31886-4	**TB-01-2018**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 22.2 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 22.1 c
(c) Field analysis required. Received out of hold time and analyzed by request. temp. 22.3 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181212		
Lab Sample ID:	TD31886-1	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71704.D	1	12/14/18 16:56	FT	n/a	n/a	VZ6055
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0041	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181212		
Lab Sample ID:	TD31886-1	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P55649.D	1	12/18/18 18:02	GJ	12/18/18 10:00	OP48166	EP2721
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-66%
4165-62-2	Phenol-d5	18%		10-63%
118-79-6	2,4,6-Tribromophenol	69%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181212		
Lab Sample ID:	TD31886-1	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.43		su	1	12/17/18 15:45	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 22.2 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181212		
Lab Sample ID:	TD31886-2	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71690.D	1	12/14/18 11:14	FT	n/a	n/a	VZ6055
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0223	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181212		
Lab Sample ID:	TD31886-2	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P55646.D	1	12/18/18 16:39	GJ	12/18/18 10:00	OP48166	EP2721
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-66%
4165-62-2	Phenol-d5	18%		10-63%
118-79-6	2,4,6-Tribromophenol	69%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181212		
Lab Sample ID:	TD31886-2	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.06		su	1	12/17/18 15:45	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 22.1 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD31886-3	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71705.D	1	12/14/18 17:20	FT	n/a	n/a	VZ6055
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0041	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD31886-3	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P55650.D	1	12/18/18 18:29	GJ	12/18/18 10:00	OP48166	EP2721
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	66%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD31886-3	**Date Sampled:**	12/12/18
Matrix:	AQ - Water	**Date Received:**	12/12/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	7.42		su	1	12/17/18 15:45	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 22.3 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-2018		
Lab Sample ID:	TD31886-4	**Date Sampled:**	12/12/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/12/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71687.D	1	12/14/18 10:01	FT	n/a	n/a	VZ6055
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #:
Bottle Order Control #:
SGS Accutest Quote #:
SGS Accutest Job #: TD31886

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hanif Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preserved: HCl	NaOH	ZnAc/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-20181212	12/12/18	11:30		WW	6	3					3							X	X	X	-1
2	SA-I-20181212	12/12/18	12:30		WW	6	3					3							X	X	X	-2
3	Field Duplicate	12/12/18	—		WW	6	3					3							X	X	X	-3
4	MS/MSD for sample SA-I-20181212	12/12/18	12:30		WW	10	6					4							X	X		-2
5	TB-01-2018	12/12/18	—		TB	2	2												X			-4

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Labtink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate

** 2,4-Dimethylphenol, Total Cresols

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1		12/12/18 1411	1		2		2	
3	Relinquished by Sampler:	Date Time:	Received By: 3	Date Time:	Relinquished By: 4	Date Time:	Received By: 4	Date Time:
5	Relinquished by:	Date Time:	Received By: 5	Date Time:	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp: 5.4

SGS

COOLER TEMP FORM

TC# TD 31886

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 2-12-18

Client: JACOBS

Cooler Number: 1

Thermometer ID: JR4 CF, °C 1 Corrected Temp, °C 5.4

SAMPLES CONTAINED IN COOLER

DP

(2) LAG
(4) 280 MP
- 5 (3) LLA HCl

- 6 TB

SM027
Rev. 7
1/3/18

TD31886: Chain of Custody
Page 2 of 6

SGS

COOLER TEMP FORM

TC# TO31886

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 12/12/18

Client: Jacobs

Cooler Number: 2

Thermometer ID: IR4 CF, °C 0.2 Corrected Temp, °C 5.6

SAMPLES CONTAINED IN COOLER

FTB

SM027
Rev. 7
1/3/18

SGS Sample Receipt Summary

Job Number: TD31886 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 2 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.4/5.4); #2: (5.6/5.6);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD31886 **Date / Time Received:** 12/12/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
2	TD31886-1	LAG	1	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-1	LAG	2	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-1	250ml	3	3G	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	LAG	1	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	LAG	2	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	250ml	3	3G	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	LAG	7	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	LAG	8	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	LAG	12	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	LAG	13	4TT	N/P	Note #2 - Preservative check not applicable.				
2	TD31886-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31886-3	LAG	1	4TT	N/P	Note #2 - Preservative check not applicable.				

Sample Receipt Log

Job #: TD31886 **Date / Time Received:** 12/12/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD31886-3	LAG	2	4TT	N/P	Note #2 - Preservative check not applicable.				
1	TD31886-3	250ml	3	3G	N/P	Note #2 - Preservative check not applicable.				
1	TD31886-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31886-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31886-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD31886-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD31886 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	12/26/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**12/26/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD31886**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN95122, OP48166, VZ6055**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	12/26/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD31886				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN95122, OP48166, VZ6055				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**12/26/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD31886**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN95122, OP48166, VZ6055**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD31886
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6055-MB	Z71686.D	1	12/14/18	FT	n/a	n/a	VZ6055

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31886-1, TD31886-2, TD31886-3, TD31886-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike Summary

Job Number: TD31886
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6055-BS	Z71684.D	1	12/14/18	FT	n/a	n/a	VZ6055

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31886-1, TD31886-2, TD31886-3, TD31886-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	112	90	46-129
71-43-2	Benzene	25	24.0	96	68-119
107-06-2	1,2-Dichloroethane	25	24.3	97	68-121
100-41-4	Ethylbenzene	25	25.8	103	71-117
97-63-2	Ethyl methacrylate	25	27.6	110	59-118
78-83-1	Isobutyl alcohol	250	284	114	22-162
80-62-6	Methyl methacrylate	25	27.2	109	53-135
78-93-3	Methyl ethyl ketone	125	127	102	51-129
108-88-3	Toluene	25	25.0	100	73-119
1330-20-7	Xylene (total)	75	76.6	102	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD31886
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD31886-2MS	Z71691.D	1	12/14/18	FT	n/a	n/a	VZ6055
TD31886-2MSD	Z71692.D	1	12/14/18	FT	n/a	n/a	VZ6055
TD31886-2	Z71690.D	1	12/14/18	FT	n/a	n/a	VZ6055

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31886-1, TD31886-2, TD31886-3, TD31886-4

CAS No.	Compound	TD31886-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	125	100	125	113	90	10	46-129/25
71-43-2	Benzene	1.0	U	25	24.0	96	25	23.1	92	4	68-119/12
107-06-2	1,2-Dichloroethane	22.3		25	46.6	97	25	46.8	98	0	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	26.0	104	25	24.5	98	6	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	27.7	111	25	27.2	109	2	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	292	117	250	294	118	1	22-162/30
80-62-6	Methyl methacrylate	10	U	25	27.8	111	25	27.3	109	2	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	126	101	125	123	98	2	51-129/22
108-88-3	Toluene	1.0	U	25	25.2	101	25	23.5	94	7	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	77.2	103	75	73.6	98	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD31886-2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	100%	104%	68-124%
2037-26-5	Toluene-D8	103%	101%	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	101%	99%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD31886
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48166-MB	P55643.D	1	12/18/18	GJ	12/18/18	OP48166	EP2721

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD31886-1, TD31886-2, TD31886-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	23%	10-66%
4165-62-2	Phenol-d5	16%	10-63%
118-79-6	2,4,6-Tribromophenol	57%	32-128%
4165-60-0	Nitrobenzene-d5	55%	29-115%
321-60-8	2-Fluorobiphenyl	49%	34-113%
1718-51-0	Terphenyl-d14	65%	23-138%

Blank Spike Summary

Job Number: TD31886
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48166-BS	P55644.D	1	12/18/18	GJ	12/18/18	OP48166	EP2721

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD31886-1, TD31886-2, TD31886-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	25.3	51	39-107
	Cresol, Total	100	39.0	39* [a]	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	25%	10-66%
4165-62-2	Phenol-d5	18%	10-63%
118-79-6	2,4,6-Tribromophenol	58%	32-128%
4165-60-0	Nitrobenzene-d5	54%	29-115%
321-60-8	2-Fluorobiphenyl	56%	34-113%
1718-51-0	Terphenyl-d14	58%	23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD31886
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48166-MS	P55647.D	1	12/18/18	GJ	12/18/18	OP48166	EP2721
OP48166-MSD	P55648.D	1	12/18/18	GJ	12/18/18	OP48166	EP2721
TD31886-2	P55646.D	1	12/18/18	GJ	12/18/18	OP48166	EP2721

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD31886-1, TD31886-2, TD31886-3

CAS No.	Compound	TD31886-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	27.0	54	50	29.3	59	8	39-107/32
	Cresol, Total	5.0	U	100	40.9	41* [a]	100	43.9	44* [a]	7	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD31886-2	Limits
367-12-4	2-Fluorophenol	25%	29%	27%	10-66%
4165-62-2	Phenol-d5	18%	20%	18%	10-63%
118-79-6	2,4,6-Tribromophenol	63%	68%	69%	32-128%
4165-60-0	Nitrobenzene-d5	59%	65%		29-115%
321-60-8	2-Fluorobiphenyl	63%	66%		34-113%
1718-51-0	Terphenyl-d14	62%	68%		23-138%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD31886
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN95122	DA11883-1	su	7.68	7.68	0.0	0-10%

Associated Samples:
Batch GN95122: TD31886-1, TD31886-2, TD31886-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD32429

Sampling Date: 12/21/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com;
ATTN: Josh McFarlain

Total number of pages in report: 37

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD32429

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD32429-1	12/21/18	10:45		12/21/18	AQ	Water	SA-E-20181221
TD32429-2	12/21/18	11:15		12/21/18	AQ	Water	SA-I-20181221
TD32429-2D	12/21/18	11:15		12/21/18	AQ	Water Dup/MSD	SA-I-20181221 MSD
TD32429-2S	12/21/18	11:15		12/21/18	AQ	Water Matrix Spike	SA-I-20181221 MS
TD32429-3	12/21/18	00:00		12/21/18	AQ	Water	FIELD DUPLICATE
TD32429-4	12/21/18	00:00		12/21/18	AQ	Trip Blank Water	TB-01-2018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD32429

Site: DOWMIM (Jacobs) **Report Date** 1/2/2019 4:38:53 PM

3 Samples and 1 Trip Blank were collected on 12/21/2018 and received intact at SGS North America Inc (SGS) on 12/21/2018 and properly preserved in 2 coolers at 4.1 and 2.2 Deg C. The samples received an Accutest job number of TD32429. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VX3835

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD32429-2MS, TD32429-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP48261

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD32429-2MS, TD32429-2MSD were used as the QC samples indicated.
- Blank Spike Recovery for Cresol, Total is outside control limits. Control limits are advisory.
- Matric Spike and Matrix Spike Duplicate Recovery(s) for Cresol, Total are outside control limits. Control limits are advisory.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN95359

- Sample TD32503-1DUP was used as the QC sample for pH.
- TD32429-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.4 C.
- TD32429-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.8 C.
- TD32429-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.0 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD32429
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 12/21/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD32429-1	**SA-E-20181221**					
1,2-Dichloroethane		0.0045	0.0010	0.00040	mg/l	SW846 8260C
pH [a]		6.92			su	SM 4500H+ B-2011
TD32429-2	**SA-I-20181221**					
1,2-Dichloroethane		0.0203	0.0010	0.00040	mg/l	SW846 8260C
pH [b]		5.62			su	SM 4500H+ B-2011
TD32429-3	**FIELD DUPLICATE**					
1,2-Dichloroethane		0.0044	0.0010	0.00040	mg/l	SW846 8260C
pH [c]		6.88			su	SM 4500H+ B-2011
TD32429-4	**TB-01-2018**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.8 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp. 20.4 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp. 21.0 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SA-E-20181221		
Lab Sample ID:	TD32429-1	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0125343.D	1	12/27/18 14:45	FT	n/a	n/a	VX3835
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0045	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	82%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181221		
Lab Sample ID:	TD32429-1	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J194198.D	1	12/28/18 16:00	GJ	12/28/18 10:00	OP48261	EJ2912
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-66%
4165-62-2	Phenol-d5	14%		10-63%
118-79-6	2,4,6-Tribromophenol	68%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-E-20181221		
Lab Sample ID:	TD32429-1	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.92		su	1	12/27/18 11:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.8 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SA-I-20181221		
Lab Sample ID:	TD32429-2	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0125336.D	1	12/27/18 11:45	FT	n/a	n/a	VX3835
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0203	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	84%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181221		
Lab Sample ID:	TD32429-2	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J194199.D	1	12/28/18 16:27	GJ	12/28/18 10:00	OP48261	EJ2912
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-66%
4165-62-2	Phenol-d5	14%		10-63%
118-79-6	2,4,6-Tribromophenol	68%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SA-I-20181221		
Lab Sample ID:	TD32429-2	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	5.62		su	1	12/27/18 11:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 20.4 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD32429-3	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0125344.D	1	12/27/18 15:11	FT	n/a	n/a	VX3835
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0044	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	83%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD32429-3	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J194202.D	1	12/28/18 17:49	GJ	12/28/18 10:00	OP48261	EJ2912
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

SVOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
	Cresol, Total	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	81%		32-128%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD DUPLICATE		
Lab Sample ID:	TD32429-3	**Date Sampled:**	12/21/18
Matrix:	AQ - Water	**Date Received:**	12/21/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
pH [a]	6.88		su	1	12/27/18 11:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 21.0 c

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB-01-2018		
Lab Sample ID:	TD32429-4	**Date Sampled:**	12/21/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/21/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0125345.D	1	12/27/18 15:36	FT	n/a	n/a	VX3835
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
97-63-2	Ethyl methacrylate	0.00048 U	0.010	0.00048	mg/l	
78-83-1	Isobutyl alcohol	0.020 U	0.20	0.020	mg/l	
80-62-6	Methyl methacrylate	0.00044 U	0.010	0.00044	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	83%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # TD32429

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hariz Phone #: 8324199610

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260*	8270**	pH	LAB USE ONLY
1	SA-E-2018 1220	12/21/18	10:45		WW	6	3					3							X	X	X	
2	SA-I-2018 1221	12/21/18	11:15		WW	6	3					3							X	X	X	
3	Field Duplicate	12/21/18	–		WW	6	3					3							X	X	X	
2	MS/MSD for sample SA-I-2018 1221	12/21/18	11:15		WW	10	6					4							X	X		
4	TB-01-2018	12/21/18	–		TB	2	2												X			

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283 - B8270SL & V8260SL

* 1,2-Dichloroethane, 2-Butanone, Acetone, Benzene, Ethylbenzene, Isobutanol, Toluene, Total Xylenes, Ethyl methacrylate, Methyl methacrylate
** 2,4-Dimethylphenol, Total Cresols

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1 Atif Hariz	12/21/18 13:25	1 S. Ramos 12-21-18 1325		2		2	
3		3		4		4	
5		5					

Custody Seal # ☐ Intact ☐ Not intact Preserved where applicable ☑ On Ice ☑ Cooler Temp 2.2

5.1

5

TD32429: Chain of Custody
Page 1 of 6

SGS

COOLER TEMP FORM

SGS JOB# TD32429

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 12-21-18

Client: JACOBS

Cooler Number:

Thermometer ID: IR-4 CF, °C 0.0 Corrected Temp, °C 4.1

SAMPLES CONTAINED IN COOLER

-2

(6) LAG

(1) 1250 NP

(9) UA

SM027
Rev. 7
1/3/18

TD32429: Chain of Custody
Page 2 of 6

SGS

COOLER TEMP FORM

SGS JOB# TD32429

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 12-21-18

Client: JACOBS

Cooler Number:

Thermometer ID: JR-4 CF, °C 0.0 Corrected Temp, °C 2.2

SAMPLES CONTAINED IN COOLER

1/3 (2) LAG
(1) 280 HP
(3) UA

SM027
Rev. 7
1/3/18

TD32429: Chain of Custody
Page 3 of 6

SGS Sample Receipt Summary

Job Number: TD32429 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 2 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (2.2/2.2); #2: (4.1/4.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD32429 **Date / Time Received:** 12/21/2018 **Initials:** ds

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD32429-1	LAG	1	4XX	N/P	Note #2 - Preservative check not applicable.				
1	TD32429-1	LAG	2	4XX	N/P	Note #2 - Preservative check not applicable.				
1	TD32429-1	250ml	3	3K	N/P	Note #2 - Preservative check not applicable.				
1	TD32429-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD32429-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD32429-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	LAG	1	4XX	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	LAG	2	4XX	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	LAG	3	4XX	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	LAG	4	4XX	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	LAG	5	4XX	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	LAG	6	4XX	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	250ml	7	3K	N/P	Note #2 - Preservative check not applicable.				
2	TD32429-2	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	12	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	13	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-2	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD32429-3	LAG	1	4XX	N/P	Note #2 - Preservative check not applicable.				

Sample Receipt Log

Job #: TD32429 **Date / Time Received:** 12/21/2018 **Initials:** ds

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD32429-3	LAG	2	4XX	N/P	Note #2 - Preservative check not applicable.				
1	TD32429-3	250ml	3	3K	N/P	Note #2 - Preservative check not applicable.				
1	TD32429-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD32429-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD32429-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
2	TD32429-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD32429 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	1/2/2019

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**1/2/2019**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD32429**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN95359, OP48261, VX3835**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X			**2**	
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X			**2**	
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	1/2/2019				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD32429				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN95359, OP48261, VX3835				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**1/2/2019**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD32429**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN95359, OP48261, VX3835**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD32429
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3835-MB	X0125333.D	1	12/27/18	FT	n/a	n/a	VX3835

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD32429-1, TD32429-2, TD32429-3, TD32429-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
97-63-2	Ethyl methacrylate	ND	10	0.48	ug/l	
78-83-1	Isobutyl alcohol	ND	200	20	ug/l	
80-62-6	Methyl methacrylate	ND	10	0.44	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	80%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike Summary

Job Number: TD32429
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX3835-BS	X0125330.D	1	12/27/18	FT	n/a	n/a	VX3835

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD32429-1, TD32429-2, TD32429-3, TD32429-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	105	84	46-129
71-43-2	Benzene	25	21.8	87	68-119
107-06-2	1,2-Dichloroethane	25	21.0	84	68-121
100-41-4	Ethylbenzene	25	21.8	87	71-117
97-63-2	Ethyl methacrylate	25	23.7	95	59-118
78-83-1	Isobutyl alcohol	250	229	92	22-162
80-62-6	Methyl methacrylate	25	23.3	93	53-135
78-93-3	Methyl ethyl ketone	125	114	91	51-129
108-88-3	Toluene	25	21.4	86	73-119
1330-20-7	Xylene (total)	75	64.7	86	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	82%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	106%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD32429
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD32429-2MS	X0125337.D	1	12/27/18	FT	n/a	n/a	VX3835
TD32429-2MSD	X0125338.D	1	12/27/18	FT	n/a	n/a	VX3835
TD32429-2	X0125336.D	1	12/27/18	FT	n/a	n/a	VX3835

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD32429-1, TD32429-2, TD32429-3, TD32429-4

CAS No.	Compound	TD32429-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	104	83	125	107	86	3	46-129/25
71-43-2	Benzene	1.0	U	25	21.9	88	25	23.3	93	6	68-119/12
107-06-2	1,2-Dichloroethane	20.3		25	42.4	88	25	44.1	95	4	68-121/12
100-41-4	Ethylbenzene	1.0	U	25	21.8	87	25	23.3	93	7	71-117/12
97-63-2	Ethyl methacrylate	10	U	25	22.7	91	25	24.4	98	7	59-118/19
78-83-1	Isobutyl alcohol	200	U	250	221	88	250	235	94	6	22-162/30
80-62-6	Methyl methacrylate	10	U	25	22.9	92	25	24.1	96	5	53-135/21
78-93-3	Methyl ethyl ketone	10	U	125	105	84	125	117	94	11	51-129/22
108-88-3	Toluene	1.0	U	25	21.5	86	25	22.6	90	5	73-119/13
1330-20-7	Xylene (total)	1.0	U	75	64.8	86	75	68.5	91	6	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD32429-2	Limits
1868-53-7	Dibromofluoromethane	81%	83%	84%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	100%	101%	68-124%
2037-26-5	Toluene-D8	100%	102%	99%	80-119%
460-00-4	4-Bromofluorobenzene	104%	106%	102%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD32429
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48261-MB	J194196.D	1	12/28/18	GJ	12/28/18	OP48261	EJ2912

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD32429-1, TD32429-2, TD32429-3

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
	Cresol, Total	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	22%	10-66%
4165-62-2	Phenol-d5	14%	10-63%
118-79-6	2,4,6-Tribromophenol	60%	32-128%

Blank Spike Summary

Job Number: TD32429
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48261-BS	J194197.D	1	12/28/18	GJ	12/28/18	OP48261	EJ2912

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD32429-1, TD32429-2, TD32429-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	32.1	64	39-107
	Cresol, Total	100	41.5	42* [a]	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	29%	10-66%
4165-62-2	Phenol-d5	19%	10-63%
118-79-6	2,4,6-Tribromophenol	81%	32-128%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD32429
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP48261-MS	J194200.D	1	12/28/18	GJ	12/28/18	OP48261	EJ2912
OP48261-MSD	J194201.D	1	12/28/18	GJ	12/28/18	OP48261	EJ2912
TD32429-2	J194199.D	1	12/28/18	GJ	12/28/18	OP48261	EJ2912

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD32429-1, TD32429-2, TD32429-3

CAS No.	Compound	TD32429-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.0	U	50	32.8	66	50	32.2	64	2	39-107/32
	Cresol, Total	5.0	U	100	42.2	42*	100	42.4	42*	0	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	TD32429-2	Limits
367-12-4	2-Fluorophenol	29%	29%	23%	10-66%
4165-62-2	Phenol-d5	19%	19%	14%	10-63%
118-79-6	2,4,6-Tribromophenol	80%	78%	68%	32-128%

(a) Advisory control limits.

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD32429
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
pH	GN95359	TD32503-1	su	7.48	7.48	0.0	0-10%

Associated Samples:
Batch GN95359: TD32429-1, TD32429-2, TD32429-3
(*) Outside of QC limits

Appendix B
2018 Status Report: 13-Acre Tract Groundwater Containment and Treatment System

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B-1 System Inspection Results: Site Visits
B-2 13-Acre Tract 2018 Analytical Results

Figure

B-1 Site Location and Site Plan

Attachment

B-1 Laboratory Report

1. Introduction

1.1 Site Description

This appendix summarizes activities conducted between January 1 and December 31, 2018 related to the groundwater containment and treatment system (system) located at the Rohm and Haas 13-Acre Tract at the Charlie Burch Pits Site, Spring, Texas (Figure B-1).

1.2 Report Objectives

This appendix has been prepared to satisfy an objective of the revised site Response Action Plan (Parsons 2011) for documenting groundwater remediation system operations in an annual report. The report includes summary information regarding the total gallons of groundwater recovered as well as analytical results for treated groundwater.

2. Description of 13-Acre Tract Groundwater Containment and Treatment System

2.1 System Description

The primary objective of the 13-Acre Tract system is to capture 1,2-dichloroethane (1,2-DCA) and maintain hydraulic control of the plume to prevent further migration of 1,2-DCA. Concentrations near the recovery wells have been reduced to below its protective concentration level (PCL) of 0.005 milligram per liter (mg/L) and the system has continued to operate to retain the hydraulic conditions (flow). The location of the system is depicted on Figure B-1 and described below.

Throughout the reporting period, the system included the major components listed below:

- Four Zone A recovery wells (ranging from 45 to 55 feet below ground surface) housed in concrete vaults with a steel protective cover and equipped with Grundfos Redi-Flo3 submersible electric pumps. However, the current configuration only uses two of the wells (TRW-CB-3 and TRW-CB-4) to maintain hydraulic containment of the plume at the 13-Acre Tract system. Wells TRW-CB-1 and TRW-CB-2 remain in place, but the pumps have been removed and the system is offline.
- Two protective concrete vaulted valve boxes house pressure gauges, totalizing flow meters, and sampling ports. Two CU300 status control units for the Redi-Flo3 pumps are located adjacent to each valve box. However, the CU300s located next to wells TRW-CB-1 and TRW-CB-2 have been previously removed.
- Subsurface Schedule 80 polyvinyl chloride and high-density polyethylene piping conveys groundwater from the recovery wells to the treatment compound.
- The treatment compound contains a cartridge sediment filter system, two 2,000-pound liquid phase granular activated carbon (GAC) vessels operating in series, and a system control shed.
- Three GAC vessels are located within the treatment compound. During normal operation, two GAC vessels operate as lead and lag vessels, while the third GAC vessel is used as a standby that is placed online when the lead vessel exhibits breakthrough.
- The system control shed houses piping that conveys treated water from the GAC vessels, two Signet totalizing flow meters, the control panel, and the breaker panel.
- Alarms provide notification of low water flow, high cartridge filter differential pressure, and high-water levels in infiltration trench CB-IT-2 or in a recovery well. Low flow is the only alarm that will shut down the system. Alarms from high pressure in the filter provides notification that the filter, low flow in effluent lines, and high-water level in Infiltration Trench CB-IT-2 are currently not dialing out when triggered. During over 10 years of operation, no alarm conditions were encountered from high water level in the infiltration trench or the high-pressure sensors. High-water levels in recovery wells is indicative of pump failure or stoppage. This will trigger an alarm through the system's dial-out feature.

- Piping conveys treated water to the infiltration trench currently in operation (CB-IT-2). Two infiltration trenches (CB-IT-1 and CB-IT-2) were constructed; however, only CB-IT- 2 is in service.

2.2 Water Discharge Criteria

Injection of the treated groundwater at the Site is covered under an underground injection control (UIC) Class V Authorization approved by a Texas Council on Environmental Quality amendment letter dated November 23, 2013, and subsequent UIC authorization dated March 20, 2014. In accordance with the UIC authorization, treated groundwater is subsequently reinjected into the uppermost aquifer (Zone A).

The current principal reinjection requirements are summarized below:

- Reinjection of treated groundwater will not exceed 80 gallons per minute (gpm).
- Injection volumes, pressures, and concentrations of chemicals of concern (including pH and total dissolved solids [TDS]) in the treated groundwater shall be sampled quarterly at the point of reinjection and reported semiannually.
- Concentration levels shall not exceed the water quality levels of the extracted groundwater and should remain below PCLs for 1,2-DCA.

None of the UIC authorization requirements were exceeded during the reporting period.

3. System Operations, Maintenance, and Sampling

This section discusses system operation, maintenance, and sampling during the reporting period of January 1 through December 31, 2018. Quarterly samples were collected on:

- March 30, 2018
- June 14, 2018
- August 8, 2018
- October 17, 2018

3.1 System Operation and Maintenance

The operation and maintenance program included the following elements during each visit:

- *System Inspection:* During inspection the following parameters were recorded:
  - Pump pressures
  - Total volumetric flow and flow rate from each well
  - Total volumetric flow and flow rate to CB-IT-2

The following actions were taken as part of routine site operation and maintenance activities conducted during the reporting period:

- *Filter Change-out:* Parsons changed the filters in March 2018.
- *GAC Change-out:* A carbon changeout was conducted in January 2018. Data collected since January 2018 indicate concentrations of 1,2-DCA in the treated effluent (Post-GAC samples) were in compliance with the approved UIC Authorization Amendment dated March 20, 2014. The amendment requires that chemical concentrations in reinjected water to be lower than in the water being extracted at the site, or below the PCL.

The following non-routine events associated with the 13-acre tract system which occurred during the reporting period:

- *Temporary System Shutdowns:* System shutdowns exceeding 24 hours occurred for the following reason:
  - The system was shutdown, locked-out, and tagged-out on October 17, 2018 through January 29, 2019 to replace one pump and two transducers that were not functioning properly due to inclement weather which submerged the junction boxes.
- *Miscellaneous Operation and Maintenance Activities:* Miscellaneous operation and maintenance activities during the 2018 reporting period include:
  - August 2018: Infiltration trench CB-IT-2 was inspected for the potential of reduced infiltration capacity and associated aboveground ponding from root growth. No reduced infiltration capacity and aboveground ponding was observed during the reporting period, and a semiannual root inhibitor application of copper sulfate was performed as a maintenance measure for the infiltration trench.
  - October 2018: The area around the treatment system, well vaults, and infiltration trench in the 13-Acre Tract was mowed in advance of groundwater sampling.

The current configuration utilizes TRW-CB-3 and TRW-CB-4 to maintain hydraulic containment of the plume at the 13-Acre Tract system. Wells TRW-CB-1 and TRW-CB-2 remain in place, but pumps have been removed and the system is offline.

3.2 Groundwater Recovery Volume

Based on data from the total flow meter readings (Table B-1), approximately 7.4 million gallons of groundwater were recovered between January 1 and December 31, 2018, with a total recovered volume since startup of approximately 181.5 million gallons.

3.3 Quarterly Sampling Results

Quarterly samples are collected before recovered groundwater enters the lead vessel (Influent/Pre-GAC sample), at the intermediate stage between the two GAC vessels, and after exiting the lag vessel (Effluent/Post-GAC sample). Samples were analyzed for 1,2- DCA, TDS, and pH. The samples from each quarterly event were submitted to SGS Accutest Laboratories in Houston, Texas. Laboratory analytical results for the quarterly samples are summarized in Table B-2.

As shown, sample results suggest an average concentration of 1,2-DCA in the influent of 0.0007 mg/L over the four sampling events. 1,2-DCA was not detected in effluent (Post-GAC) samples collected in three of the four events. The concentration of 1,2-DCA detected in October was well below the PCL for groundwater injection.

3.4 Summary

The following summarize results from system operation and maintenance in 2018.

- *Capture Zone:* The system continues to create a capture zone that has helped prevent further downgradient migration of impacted groundwater. Continued operation will help maintain hydraulic conditions within the radius of influence of the system. The 1,2-DCA concentrations in surrounding wells, and wells downgradient of the system, have shown a net reduction in 1,2-DCA since operations were initiated in 2006.
- *Treatment Effectiveness:* The system continues to operate and meet the reinjection requirements, in accordance with the UIC authorization.

Tables

Table B-1. System Inspection Results: Site Visits

Charlie Burch Pits Site, Spring, Texas

Inspection Date	Flow Rate to CB-IT-2 (gpm)	Secondary GAC Pressure (PSI)	Total flow within inspection period (gallon)
1/26/2018	33.5	6.0	1,494,330
2/27/2018	6.2	4.0	249,930
3/30/2018	19.7	5.0	878,930
4/01/2018	NA	NA	NA
5/30/2018	NA	6.5	NA
6/30/2018	35.8	NA	1,546,590
7/01/2018	NA	NA	NA
8/16/2018	35.5	3.5	1,586,870
9/20/2018	19.2	4.0	829,185*
10/17/2018	18.6	3.0	829,185*
11/15/2018	SD	SD	SD
12/12/2018	SD	SD	SD
Total			**7,415,020**

Notes:

1. Flow meter was deemed completely Illegible; to be replaced.

2. Flow meter was broken and being replaced with new meter.

3. NA - Data was not recorded in the inspection record and as a result is not available.

SD = System Down

gpm= gallons per minute

* - Value is missing from field monthly inspection form. Value is estimated based on previous monthly flow trends.

4. Total 2018 Discharge (using total flow within inspection period values): 7,415,020 gallons

Effluent daily discharge shall be limited to less than 80 gpm

Table B-2. 13-Acre Tract 2018 Analytical Results

Charlie Burch Pits Site, Spring, Texas

Location	Date Collected	1,2-DCA (mg/L)	TDS (mg/L)	pH
Influent	3/30/18	0.00050 J	628	5.85
	6/14/18	0.00075 J	ND	ND
	8/8/18	ND	718	5.85
	8/22/18	0.00085 J	688	6.17
	10/17/18	0.00079 J	643	7.91
Intermediate	3/30/18	<0.00030	600	5.81
	6/14/18	<0.00030	ND	ND
	8/8/18	ND	727	5.76
	8/22/18	0.00078 J	647	6.08
	10/17/18	0.00084 J	650	7.88
Effluent	3/30/18	<0.00030	626	5.86
	6/14/18	<0.00030	ND	ND
	8/8/18	ND	704	5.72
	8/22/18	<0.00040	667	6.13
	10/17/18	0.00043 J	648	7.10

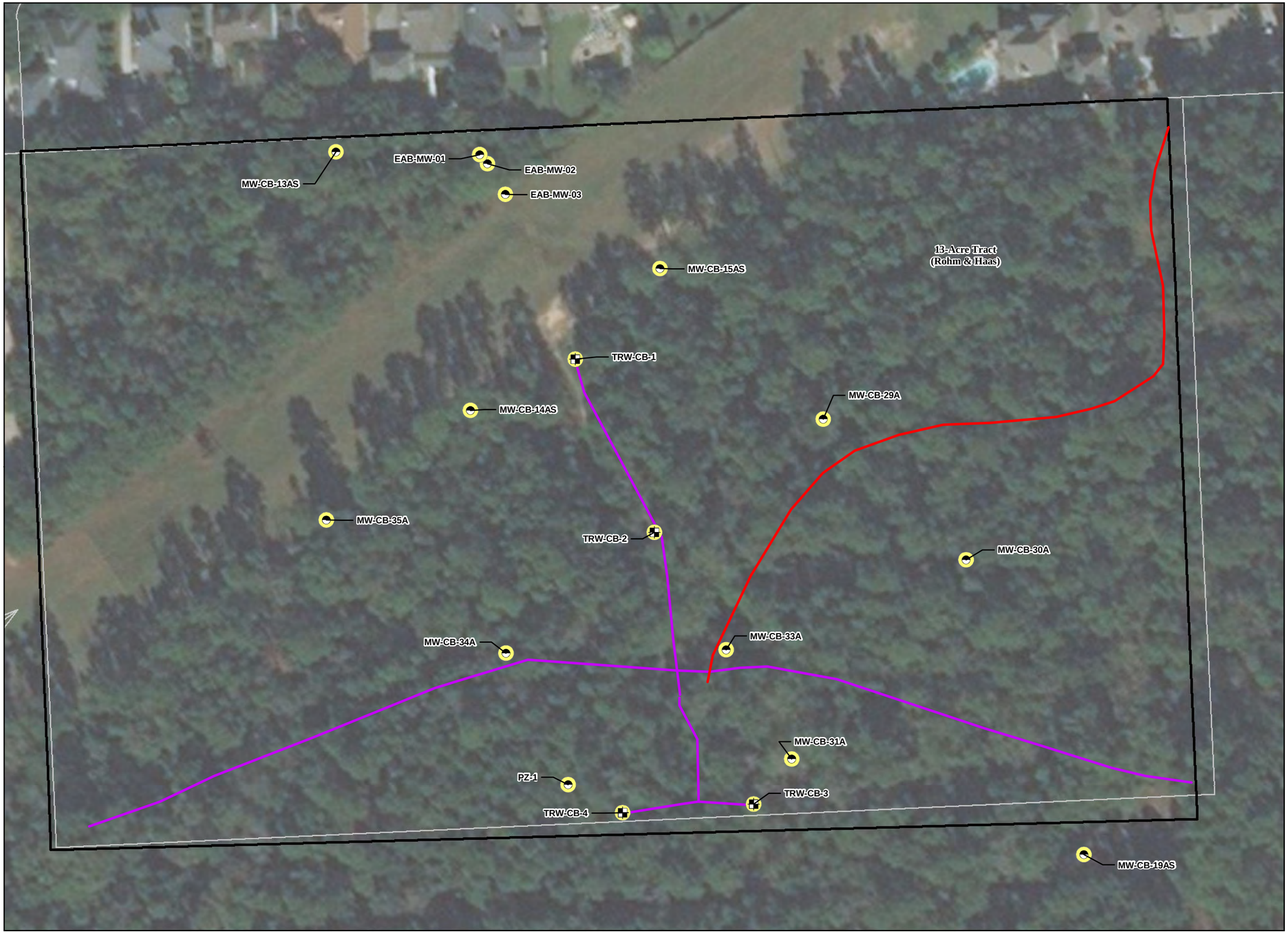
Notes:

mg/L: milligram(s) per liter

ND: No Data

J: Estimated result, analyte detected above the method detection limit (MDL) but below the reporting limit (RL).

Figure



Legend

A & AS = Screen less than 40 ft depth
MW = Monitoring well
TP = Temporary piezometer completed as monitoring well
TRW = Trench Recovery Well
PZ = Peizometer
EAB = Enhanced Anaerobic Bioremediation

- Recovery Well (Zone A)
- Monitoring Well Location (Zone A)
- Site Boundary
- Recovery System Piping
- Electrical Line

0 40 80
Feet

Figure B.1
Site Location and Site Plan
Charlie Burch Site
Spring, Texas

Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
Rohn and Haas Texas Inc., VCP No. 421

N

Drawing Date: February 2019

Drawn By:

JACOBS

R:\ENBG\00_PROJ\D\DOW_CHEMICAL\CHARLIEBURCH\MAPS\REPORT\UTILITIES_SOUTH.MXD GTWIGG 3/5/2019

Attachment B-1
(See Attached CD)

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

Charlie Burch (Parsons)

13AT Quarterly

SGS Job Number: TD18963

Sampling Date: 03/30/18

Report to:

Parsons Corporation
1900 West Loop S. #400
Houston, TX 77027
Sandra.delasFuentes@parsons.com; daniel.r.griffiths@parsons.com;
brian.vanderglas@parsons.com; mark.delorimier@parsons.com;
ATTN: Sandra de las Fuentes

Total number of pages in report: 25

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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Test results relate only to samples analyzed.

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD18963

Charlie Burch (Parsons)
Project No: 13AT Quarterly

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD18963-1	03/30/18	09:25		03/30/18	AQ	Water	PRE-GAC
TD18963-1D	03/30/18	09:25		03/30/18	AQ	Water Dup/MSD	PRE-GAC MSD
TD18963-1S	03/30/18	09:25		03/30/18	AQ	Water Matrix Spike	PRE-GAC MS
TD18963-2	03/30/18	09:35		03/30/18	AQ	Water	INTERMEDIATE
TD18963-3	03/30/18	09:45		03/30/18	AQ	Water	POST-GAC
TD18963-4	03/30/18	09:55		03/30/18	AQ	Water	FIELD DUP

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD18963

Site: Charlie Burch (Parsons) **Report Date** 4/10/2018 7:13:01 PM

4 Samples were collected on 03/30/2018 and received intact at SGS North America Inc (SGS) on 03/30/2018 and properly preserved in 1 cooler at 4.1 Deg C. The samples received an Accutest job number of TD18963. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE2959

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD18963-1MS, TD18963-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN88902

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample TD18922-1DUP was used as the QC sample for Solids, Total Dissolved.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN88864

- Sample TD18963-2DUP was used as the QC sample for pH.
- TD18963-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 19.9 C.
- TD18963-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.1 C.
- TD18963-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 20.3 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD18963
Account: Dow Chemical Company
Project: Charlie Burch (Parsons)
Collected: 03/30/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
TD18963-1	**PRE-GAC**					
1,2-Dichloroethane		0.00050 J	0.0010	0.00030	mg/l	SW846 8260C
Solids, Total Dissolved		628	10	2.2	mg/l	SM 2540C-2011
pH [a]		5.85			su	SM 4500H+ B-2011
TD18963-2	**INTERMEDIATE**					
Solids, Total Dissolved		600	10	2.2	mg/l	SM 2540C-2011
pH [b]		5.81			su	SM 4500H+ B-2011
TD18963-3	**POST-GAC**					
Solids, Total Dissolved		626	10	2.2	mg/l	SM 2540C-2011
pH [c]		5.86			su	SM 4500H+ B-2011
TD18963-4	**FIELD DUP**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 20.1 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 19.9 c
(c) Field analysis required. Received out of hold time and analyzed by request. temp. 20.3 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	PRE-GAC		
Lab Sample ID:	TD18963-1	**Date Sampled:**	03/30/18
Matrix:	AQ - Water	**Date Received:**	03/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch (Parsons)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0066680.D	1	04/05/18 14:38	ZQ	n/a	n/a	VE2959
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00050	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	94%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PRE-GAC		
Lab Sample ID:	TD18963-1	**Date Sampled:**	03/30/18
Matrix:	AQ - Water	**Date Received:**	03/30/18
		Percent Solids:	n/a
Project:	Charlie Burch (Parsons)		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	628	10	2.2	mg/l	1	04/03/18	BG	SM 2540C-2011
pH [a]	5.85			su	1	03/30/18 15:30	OZ	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 20.1 c

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: INTERMEDIATE
Lab Sample ID: TD18963-2
Matrix: AQ - Water
Method: SW846 8260C
Project: Charlie Burch (Parsons)

Date Sampled: 03/30/18
Date Received: 03/30/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0066684.D	1	04/05/18 16:16	ZQ	n/a	n/a	VE2959
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	95%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INTERMEDIATE		
Lab Sample ID:	TD18963-2	**Date Sampled:**	03/30/18
Matrix:	AQ - Water	**Date Received:**	03/30/18
		Percent Solids:	n/a
Project:	Charlie Burch (Parsons)		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	600	10	2.2	mg/l	1	04/03/18	BG	SM 2540C-2011
pH [a]	5.81			su	1	03/30/18 15:30	OZ	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 19.9 c

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	POST-GAC		
Lab Sample ID:	TD18963-3	**Date Sampled:**	03/30/18
Matrix:	AQ - Water	**Date Received:**	03/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch (Parsons)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0066685.D	1	04/05/18 16:40	ZQ	n/a	n/a	VE2959
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	95%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	POST-GAC		
Lab Sample ID:	TD18963-3	**Date Sampled:**	03/30/18
Matrix:	AQ - Water	**Date Received:**	03/30/18
		Percent Solids:	n/a
Project:	Charlie Burch (Parsons)		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	626	10	2.2	mg/l	1	04/03/18	BG	SM 2540C-2011
pH [a]	5.86			su	1	03/30/18 15:30	OZ	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 20.3 c

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	FIELD DUP		
Lab Sample ID:	TD18963-4	**Date Sampled:**	03/30/18
Matrix:	AQ - Water	**Date Received:**	03/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Charlie Burch (Parsons)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0066686.D	1	04/05/18 17:05	ZQ	n/a	n/a	VE2959
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF ___

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: TD18963

Client / Reporting Information

Company Name: Parsons Corporation
Street Address: 1900 West Loop S. #400
City: Houston State: TX Zip: 77027
Project Contact: Sandra de las Fuentes E-mail:
Phone #: 713-871-7000 Fax #:
Sampler(s) Name(s): Danielle Delgado (346)274-4781 Phone #:

Project Information

Project Name: Charlie Burch Site - 13AT Quarterly
Street:
City: State:
Project #: 449222-02000
Client Purchase Order #:
Project Manager: Brian Vandeviglas

Billing Information (if different from Report to)

Company Name: Rohm & Haas (Dow)
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260B	TDS & pH
1	Pre-GAC	3/30/18	0915		WW	4	X					X							X	X
2	Intermediate		0935		WW	4	X					X							X	X
3	Post-GAC		0945		WW	4	X					X							X	X
4	Pre-GAC MS/MSD		0925		WW	6	X												X	
5	Field Dup		0955		WW	3	X												X	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

LAB USE ONLY

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM15655

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished By Sampler: 1	Date Time: 3/30/18 1147	Received By: 1	Relinquished By: 2	Date Time: 3/30/18	Received By: 2 1230 3/30/18
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[X] Intact [ ] Not intact	Preserved where applicable [X] On Ice [X] Cooler Temp 4.1

5.1 5

TD18963: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC# TD18963

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 3-30-18

Client: Parsons

Cooler Number:

Thermometer ID: TK-4 CF, °C 0.0 Corrected Temp, °C 4.1

SAMPLES CONTAINED IN COOLER

ACCUTEST

Client: PARSONS CORPORATION

Project: CHARLIE BOURCH BIAT

Attn: DANIELA DELGADO

Cooler: 1 of 1

Form: SM027-06 Rev 10/24/2016

TD18963: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD18963 **Client:** PARSONS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (4.1/4.1);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐	☑	☐	☐	☐
2. Trip Blank listed on COC:	☐	☑	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Sample Receipt Log

Job #: TD18963 **Date / Time Received:** 3/30/2018 12:30:00 PM **Initials:** DS

Client: PARSONS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD18963-1	1000ml	1	3A	N/P	Note #2 - Preservative check not applicable.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-1	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-2	1000ml	1	3A	N/P	Note #2 - Preservative check not applicable.	IR-4	4.1	0	4.1
1	TD18963-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-3	1000ml	1	3A	N/P	Note #2 - Preservative check not applicable.	IR-4	4.1	0	4.1
1	TD18963-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1
1	TD18963-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	4.1	0	4.1

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD18963
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE2959-MB	E0066679.D	1	04/05/18	ZQ	n/a	n/a	VE2959

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD18963-1, TD18963-2, TD18963-3, TD18963-4

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	94%	72-126%

Blank Spike Summary

Job Number: TD18963
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE2959-BS	E0066676.D	1	04/05/18	ZQ	n/a	n/a	VE2959

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD18963-1, TD18963-2, TD18963-3, TD18963-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	22.6	90	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD18963
Account: DOWMIM Dow Chemical Company
Project: Charlie Burch (Parsons)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD18963-1MS	E0066682.D	1	04/05/18	ZQ	n/a	n/a	VE2959
TD18963-1MSD	E0066683.D	1	04/05/18	ZQ	n/a	n/a	VE2959
TD18963-1	E0066680.D	1	04/05/18	ZQ	n/a	n/a	VE2959

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD18963-1, TD18963-2, TD18963-3, TD18963-4

CAS No.	Compound	TD18963-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	0.50	J	25	23.0	90	25	22.6	88	2	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD18963-1	Limits
1868-53-7	Dibromofluoromethane	100%	100%	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	101%	101%	68-124%
2037-26-5	Toluene-D8	100%	100%	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	96%	94%	72-126%

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD18963
Account: DOWMIM - Dow Chemical Company
Project: Charlie Burch (Parsons)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN88902	10	0.0	mg/l	500	479	95.8	88-110%

Associated Samples:
Batch GN88902: TD18963-1, TD18963-2, TD18963-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD18963
Account: DOWMIM - Dow Chemical Company
Project: Charlie Burch (Parsons)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN88902	TD18922-1	mg/l	198	201	1.5	0-5%
pH	GN88864	TD18963-2	su	5.81	5.81	0.0	0-10%

Associated Samples:
Batch GN88864: TD18963-1, TD18963-2, TD18963-3
Batch GN88902: TD18963-1, TD18963-2, TD18963-3
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

13-Acre Tract and Source Area Air Stripper

SGS Job Number: TD22675

Sampling Date: 06/14/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: 42

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD22675

DOWMIM (Jacobs)
Project No: 13-Acre Tract and Source Area Air Stripper

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD22675-1	06/14/18	09:00		06/14/18	AQ	Water	RW-CB-5R-06142018
TD22675-2	06/14/18	09:40		06/14/18	AQ	Water	RW-CB-3R-06142018
TD22675-3	06/14/18	10:35		06/14/18	AQ	Water	RW-CB-3D-06142018
TD22675-4	06/14/18	10:50		06/14/18	AQ	Water	RW-CB-2R-06142018
TD22675-5	06/14/18	11:15		06/14/18	AQ	Water	RW-CB-4R-06142018
TD22675-6	06/14/18	12:10		06/14/18	AQ	Water	13AT-I-06142018
TD22675-7	06/14/18	12:15		06/14/18	AQ	Water	13AT-E-06142018
TD22675-8	06/14/18	12:35		06/14/18	AQ	Water	TW-CB-1-06142018
TD22675-9	06/14/18	12:55		06/14/18	AQ	Water	TW-CB-2-06142018
TD22675-10	06/14/18	13:00		06/14/18	AQ	Water	TW-CB-2-06142018 DUP
TD22675-11	06/14/18	13:05		06/14/18	AQ	Water	13AT-INT-06142018
TD22675-12	06/14/18	13:25		06/14/18	AQ	Water	PZ-3-06142018
TD22675-13	06/14/18	13:40		06/14/18	AQ	Water	PZ-2-06142018

Sample Summary
(continued)

Dow Chemical Company

Job No: TD22675

DOWMIM (Jacobs)
Project No: 13-Acre Tract and Source Area Air Stripper

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
TD22675-14	06/14/18	14:00		06/14/18	AQ	Water	PZ-4-06142018
TD22675-14D	06/14/18	14:00		06/14/18	AQ	Water Dup/MSD	PZ-4-06142018 MSD
TD22675-14S	06/14/18	14:00		06/14/18	AQ	Water Matrix Spike	PZ-4-06142018 MS
TD22675-15	06/14/18	00:00		06/14/18	AQ	Trip Blank Water	TB01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD22675

Site: DOWMIM (Jacobs) **Report Date** 6/28/2018 6:57:36 PM

14 Samples and 1 Trip Blank were collected on 06/14/2018 and received intact at SGS North America Inc (SGS) on 06/14/2018 and properly preserved in 1 cooler at 1.4 Deg C. The samples received an Accutest job number of TD22675. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE3037

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD22630-19MS, TD22630-19MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VE3038

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD22675-14MS, TD22675-14MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD22675
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD22675-1	**RW-CB-5R-06142018**					
1,2-Dichloroethane		0.0246	0.0010	0.00030	mg/l	SW846 8260C
TD22675-2	**RW-CB-3R-06142018**					
1,2-Dichloroethane		0.0113	0.0010	0.00030	mg/l	SW846 8260C
TD22675-3	**RW-CB-3D-06142018**					
1,2-Dichloroethane		0.0113	0.0010	0.00030	mg/l	SW846 8260C
TD22675-4	**RW-CB-2R-06142018**					
1,2-Dichloroethane		0.0120	0.0010	0.00030	mg/l	SW846 8260C
TD22675-5	**RW-CB-4R-06142018**					
1,2-Dichloroethane		0.0533	0.0010	0.00030	mg/l	SW846 8260C
TD22675-6	**13AT-I-06142018**					
1,2-Dichloroethane		0.00075 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-7	**13AT-E-06142018**					
No hits reported in this sample.						
TD22675-8	**TW-CB-1-06142018**					
1,2-Dichloroethane		0.00066 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-9	**TW-CB-2-06142018**					
1,2-Dichloroethane		0.0017	0.0010	0.00030	mg/l	SW846 8260C
TD22675-10	**TW-CB-2-06142018 DUP**					
1,2-Dichloroethane		0.0015	0.0010	0.00030	mg/l	SW846 8260C
TD22675-11	**13AT-INT-06142018**					
No hits reported in this sample.						

Summary of Hits

Job Number: TD22675
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 06/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD22675-12	**PZ-3-06142018**					
1,2-Dichloroethane		0.00053 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-13	**PZ-2-06142018**					
1,2-Dichloroethane		0.00079 J	0.0010	0.00030	mg/l	SW846 8260C
TD22675-14	**PZ-4-06142018**					
No hits reported in this sample.						
TD22675-15	**TB01**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RW-CB-5R-06142018		
Lab Sample ID:	TD22675-1	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068467.D	1	06/18/18 17:54	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0246	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	97%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3R-06142018		
Lab Sample ID:	TD22675-2	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068468.D	1	06/18/18 18:19	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0113	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3D-06142018		
Lab Sample ID:	TD22675-3	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068469.D	1	06/18/18 18:43	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0113	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-CB-2R-06142018
Lab Sample ID: TD22675-4
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 06/14/18
Date Received: 06/14/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068470.D	1	06/18/18 19:08	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0120	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-4R-06142018		
Lab Sample ID:	TD22675-5	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068471.D	1	06/18/18 19:33	FT	n/a	n/a	VE3037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0533	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-I-06142018		
Lab Sample ID:	TD22675-6	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068487.D	1	06/19/18 02:03	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00075	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 13AT-E-06142018
Lab Sample ID: TD22675-7
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 06/14/18
Date Received: 06/14/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068488.D	1	06/19/18 02:28	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-CB-1-06142018		
Lab Sample ID:	TD22675-8	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068489.D	1	06/19/18 02:52	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00066	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TW-CB-2-06142018
Lab Sample ID: TD22675-9
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 06/14/18
Date Received: 06/14/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068490.D	1	06/19/18 03:17	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0017	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-CB-2-06142018 DUP		
Lab Sample ID:	TD22675-10	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068491.D	1	06/19/18 03:42	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0015	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-INT-06142018		
Lab Sample ID:	TD22675-11	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068492.D	1	06/19/18 04:06	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-3-06142018		
Lab Sample ID:	TD22675-12	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068493.D	1	06/19/18 04:30	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00053	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-2-06142018		
Lab Sample ID:	TD22675-13	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068494.D	1	06/19/18 04:54	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00079	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-4-06142018		
Lab Sample ID:	TD22675-14	**Date Sampled:**	06/14/18
Matrix:	AQ - Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068483.D	1	06/19/18 00:26	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	98%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB01		
Lab Sample ID:	TD22675-15	**Date Sampled:**	06/14/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0068482.D	1	06/19/18 00:02	FT	n/a	n/a	VE3038
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	99%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 of 12

TD22675

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking
SGS Accutest

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: Bill directly to the Dow chemical company
Street Address
City State Zip
Attention:

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge SED- Sediment OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

LAB USE ONLY

Select VOCs - 1,2 Dichloroethane (1,2 DCA) ONLY

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER
1	BW-CB-5R-06142018	6-14-18	0900															
2	RW-CB-3R-06142018	6-14-18	0940															
3	ZW-CB-3D-06142018	6-14-18	1035															
4	RW-CB-2R-06142018	6-14-18	1050															
5	RW-CB-4R-06142018	6-14-18	1115															
6	13AT-1-06142018	6-14-18	1210															
7	13AT-E-06142018	6-14-18	1215															
8	TW-CB-1-06142018	6-14-18	1235															
9	TW-CB-2-06142018	6-14-18	1255															
10	TW-CB-2-06142018 Dup	6-14-18	1300															
11	13AT-TNT-06142018	6-14-18	1305															

Turnaround Time (Business days)
Standard

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other _____ REDT1 (

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
1	6-14-18 1551	1 1551 6-14-18	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
3		3	4
Relinquished by:	Date Time:	Received By:	Custody Seal # Intact Not intact
5		5	

TAGGED BY:

CHAIN OF CUSTODY

PAGE 2 of 2

TD22675

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking
SGS Accutest

Client / Reporting Information

Company Name: ch2m/Jacobs
Street Address: 5985 Rogerdale Road, Tower 2
City: Houston State: Texas Zip
Project Contact: John Ynfante E-mail: john.ynfante@jacobs.com
Phone # (281) 414-1719 Fax #
Sampler(s) Name(s): Michael Wilkinson Phone # (936) 230-8927

Project Information

Project Name: Charlie Burch
Street
City State
Project #
Client Purchase Order #
Project Manager: Elessa Sommers

Billing Information (if different from Report to)

Company Name: **Bill directly to the Dow chemical company**
Street Address
City State Zip
Attention:

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Select VOCs - 1,2 Dichloroethane (1,2 DCA) ONLY

LAB USE ONLY

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER
12	PZ-3-06142018	6-14-18	1325															
13	PZ-2-06142018	6-14-18	1340															
14	PZ-4-06142018	6-14-18	1400															
14 15	PZ-4-06142018 MS/MSD	6-14-18	1400															
15 16	TB01																	

Turnaround Time (Business days)
Standard

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULT1 (Level 3+4)
(Level 3+4)
Commercial "C"
Commercial "A" = Results Only Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

TRRP
EDD Format
Other _____ REDT1

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
1	6-14-18 1551	1	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:
3		3	4
Relinquished by:	Date Time:	Received By:	Custody Seal # Intact / Not intact
5		5	

6-14-18 1551

5.1 5

TD22675: Chain of Custody
Page 2 of 7

ACCUTEST

COOLER TEMP FORM

TC# TD22675

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 6/14/25

Client: CHEM

Cooler Number: 1

Thermometer ID: IR5 CF, °C 0.0 Corrected Temp, °C 1.4

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

5.1

5

TD22675: Chain of Custody
Page 3 of 7

SGS Sample Receipt Summary

Job Number: TD22675 **Client:** CH2MHILL **Project:** CHARLIE BURCH

Date / Time Received: 6/14/2018 1551 **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.4/1.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☑	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments Matrix is water

Problem Resolution

Job Number: TD22675

CSR: Elessa Sommers **Response Date:** 6/18/2018

Response: No action required.

Sample Receipt Log

Job #: TD22675 **Date / Time Received:** 6/14/2018 3:51:00 PM 3:51:0 **Initials:** bg

Client: CH2MHILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD22675-1	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-1	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-1	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-2	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-2	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-2	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-3	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-3	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-3	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-4	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-4	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-4	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-5	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-5	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-5	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-6	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-6	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-6	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-7	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-7	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-7	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-8	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-8	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-8	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4

Sample Receipt Log

Job #: TD22675 **Date / Time Received:** 6/14/2018 3:51:00 PM 3:51:0 **Initials:** bg

Client: CH2MHILL

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD22675-9	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-9	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-9	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-10	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-10	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-10	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-11	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-11	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-11	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-12	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-12	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-12	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-13	40ml	1	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-13	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-13	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	3	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	4	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	5	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-14	40ml	6	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-15	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4
1	TD22675-15	40ml	2	vr	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-5	1.4	0	1.4

Appendix A Laboratory Data Package Cover Page

TD22675 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	6/28/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**6/28/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22675**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**VE3037, VE3038**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**2**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	6/28/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD22675				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	VE3037, VE3038				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**6/28/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD22675**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VE3037, VE3038**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3037-MB	E0068449.D	1	06/18/18	FT	n/a	n/a	VE3037

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-1, TD22675-2, TD22675-3, TD22675-4, TD22675-5

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	97%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Method Blank Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3038-MB	E0068481.D	1	06/18/18	FT	n/a	n/a	VE3038

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-6, TD22675-7, TD22675-8, TD22675-9, TD22675-10, TD22675-11, TD22675-12, TD22675-13, TD22675-14, TD22675-15

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

Blank Spike Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3037-BS	E0068446.D	1	06/18/18	FT	n/a	n/a	VE3037

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-1, TD22675-2, TD22675-3, TD22675-4, TD22675-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	19.7	79	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3038-BS	E0068478.D	1	06/18/18	FT	n/a	n/a	VE3038

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-6, TD22675-7, TD22675-8, TD22675-9, TD22675-10, TD22675-11, TD22675-12, TD22675-13, TD22675-14, TD22675-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	22.5	90	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	106%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD22630-19MS	E0068451.D	1000	06/18/18	FT	n/a	n/a	VE3037
TD22630-19MSD	E0068452.D	1000	06/18/18	FT	n/a	n/a	VE3037
TD22630-19	E0068450.D	1000	06/18/18	FT	n/a	n/a	VE3037

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-1, TD22675-2, TD22675-3, TD22675-4, TD22675-5

CAS No.	Compound	TD22630-19 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	ND		25000	20600	82	25000	20400	82	1	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD22630-19	Limits
1868-53-7	Dibromofluoromethane	98%	98%	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	98%	100%	68-124%
2037-26-5	Toluene-D8	100%	100%	97%	80-119%
460-00-4	4-Bromofluorobenzene	104%	106%	102%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD22675
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD22675-14MS	E0068484.D	1	06/19/18	FT	n/a	n/a	VE3038
TD22675-14MSD	E0068485.D	1	06/19/18	FT	n/a	n/a	VE3038
TD22675-14	E0068483.D	1	06/19/18	FT	n/a	n/a	VE3038

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD22675-6, TD22675-7, TD22675-8, TD22675-9, TD22675-10, TD22675-11, TD22675-12, TD22675-13, TD22675-14, TD22675-15

CAS No.	Compound	TD22675-14 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	1.0	U	25	21.9	88	25	21.9	88	0	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD22675-14	Limits
1868-53-7	Dibromofluoromethane	98%	99%	94%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	97%	99%	68-124%
2037-26-5	Toluene-D8	100%	99%	98%	80-119%
460-00-4	4-Bromofluorobenzene	103%	103%	103%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

SGS Job Number: TD25339

Sampling Date: 08/08/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: **23**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

DOWMIM (Jacobs)

Job No: TD25339

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD25339-1	08/08/18	13:36		08/08/18	AQ	Water	13AT-I-08082018
TD25339-2	08/08/18	13:53		08/08/18	AQ	Water	13AT-INT-08082018
TD25339-2D	08/08/18	13:53		08/08/18	AQ	Water Dup/MSD	13AT-INT-08082018 MSD
TD25339-3	08/08/18	14:04		08/08/18	AQ	Water	13AT-E-08082018
TD25339-4	08/08/18	00:00		08/08/18	AQ	Water	DUP-01-08082018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD25339

Site: DOWMIM (Jacobs) **Report Date** 8/10/2018 11:53:16 A

4 Samples were collected on 08/08/2018 and received intact at SGS North America Inc (SGS) on 08/08/2018 and properly preserved in 1 cooler at 2.2 Deg C. The samples received an Accutest job number of TD25339. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

General Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN91875

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample TD25339-2DUP was used as the QC sample for Solids, Total Dissolved.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN91885

- Sample TD25339-2DUP was used as the QC sample for pH.
- TD25339-4 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 19.0 C.
- TD25339-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 19.1 C.
- TD25339-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 19.1 C.
- TD25339-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 19.6 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD25339
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 08/08/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD25339-1	**13AT-I-08082018**					
Solids, Total Dissolved		718	10	2.2	mg/l	SM 2540C-2011
pH [a]		5.85			su	SM 4500H+ B-2011
TD25339-2	**13AT-INT-08082018**					
Solids, Total Dissolved		727	10	2.2	mg/l	SM 2540C-2011
pH [b]		5.76			su	SM 4500H+ B-2011
TD25339-3	**13AT-E-08082018**					
Solids, Total Dissolved		704	10	2.2	mg/l	SM 2540C-2011
pH [a]		5.72			su	SM 4500H+ B-2011
TD25339-4	**DUP-01-08082018**					
Solids, Total Dissolved		690	10	2.2	mg/l	SM 2540C-2011
pH [c]		5.86			su	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 19.1 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp. 19.6 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp. 19.0 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	13AT-I-08082018		
Lab Sample ID:	TD25339-1	**Date Sampled:**	08/08/18
Matrix:	AQ - Water	**Date Received:**	08/08/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	718	10	2.2	mg/l	1	08/08/18	BG	SM 2540C-2011
pH [a]	5.85			su	1	08/08/18 17:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 19.1 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID:	13AT-INT-08082018		
Lab Sample ID:	TD25339-2	**Date Sampled:**	08/08/18
Matrix:	AQ - Water	**Date Received:**	08/08/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	727	10	2.2	mg/l	1	08/08/18	BG	SM 2540C-2011
pH [a]	5.76			su	1	08/08/18 17:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 19.6 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID: 13AT-E-08082018
Lab Sample ID: TD25339-3
Matrix: AQ - Water
Project: DOWMIM (Jacobs)

Date Sampled: 08/08/18
Date Received: 08/08/18
Percent Solids: n/a

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	704	10	2.2	mg/l	1	08/08/18	BG	SM 2540C-2011
pH [a]	5.72			su	1	08/08/18 17:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 19.1 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID:	DUP-01-08082018		
Lab Sample ID:	TD25339-4	**Date Sampled:**	08/08/18
Matrix:	AQ - Water	**Date Received:**	08/08/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	690	10	2.2	mg/l	1	08/08/18	BG	SM 2540C-2011
pH [a]	5.86			su	1	08/08/18 17:00	MS	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 19.0 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS
10165 Harwin Dr. Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD25339

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston | State: Texas | Zip: 77072
Project Contact: John Ynfante | E-mail:
Phone #: 281-414-1719 | Fax #:
Sampler(s) Name(s): | Phone #:

Project Information

Project Name: Charlie Burch
Street:
City: | State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: | State: | Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Total Dissolved Solids (TDS)	pH	Analyze MS/MSD for this sample	LAB USE ONLY
1	13AT-I-08082018	8/8/2018	13:36	Atif		1													X	X		
2	13AT-INT-08082018	8/8/2018	13:53	Atif		3													X	X		
3	13AT-E-08082018	8/8/2018	14:04	Atif		1													X	X		
4	DUP-01-08082018	8/8/2018	—	Atif		1													X	X		

PASSED BY:
VERIFIED BY:

Turnaround Time (Business days)

- [ ] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [x] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [x] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	Atif Haris	15:18 8/8/18	1	15:18 8/8/18	2		2	
3			3		4		4	
5			5					

Custody Seal # | [ ] Intact [ ] Not intact | Preserved where applicable [ ] | On Ice [x] | Cooler Temp.: 2.2

SGS ACCUTEST

COOLER TEMP FORM

TC# TD25339

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 8/8/18

Client: JACOBS

Cooler Number: 1

Thermometer ID: IN5 CF, °C 0 Corrected Temp, °C 2.2

SAMPLES CONTAINED IN COOLER

SGS

Customer Jacobs / CH2M 088417

DATE 8/8/18

SIGNATURE Atif Hariz

Form: SM027-06 Rev 10/24/2016

TD25339: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD25339 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 8/8/2018 1518 **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (2.2/2.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☐		☐	☑		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments Matrix is water.

Problem Resolution

Job Number: TD25339

CSR: Elessa Sommers **Response Date:** 8/9/2018

Response: Logged in samples with water matrix.

Sample Receipt Log

Job #: TD25339 **Date / Time Received:** 8/8/2018 3:18:00 PM **Initials:** BG

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD25339-1	1000ml	1	3C	N/P	Note #2 - Preservative check not applicable.	IR-5	2.2	0	2.2
1	TD25339-2	1000ml	1	3C	N/P	Note #2 - Preservative check not applicable.	IR-5	2.2	0	2.2
1	TD25339-2	1000ml	2	3C	N/P	Note #2 - Preservative check not applicable.	IR-5	2.2	0	2.2
1	TD25339-2	1000ml	3	3C	N/P	Note #2 - Preservative check not applicable.	IR-5	2.2	0	2.2
1	TD25339-3	1000ml	1	3C	N/P	Note #2 - Preservative check not applicable.	IR-5	2.2	0	2.2
1	TD25339-4	1000ml	1	3C	N/P	Note #2 - Preservative check not applicable.	IR-5	2.2	0	2.2

TD25339: Chain of Custody
Page 5 of 5

Appendix A Laboratory Data Package Cover Page

TD25339 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

[ ] [X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	8/10/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**8/10/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD25339**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN91875, GN91885**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?		X			**2**
		Other than those results <MQL, were all other raw values bracketed by calibration standards?			X		
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?			X		
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?			X		
		Were the MS/MSD RPDs within laboratory QC limits?			X		
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	8/10/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD25339				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	GN91875, GN91885				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?				X		
		Were percent RSDs or correlation coefficient criteria met?				X		
		Was the number of standards recommended in the method used for all analytes?				X		
		Were all points generated between the lowest and highest standard used to calculate the curve?				X		
		Are ICAL data available for all instruments used?				X		
		Has the initial calibration curve been verified using an appropriate second source standard?				X		
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?				X		
		Were percent differences for each analyte within the method-required QC limits?				X		
		Was the ICAL curve verified for each analyte?				X		
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?				X		
		Were ion abundance data within the method-required QC limits?				X		
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?				X		
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?				X		
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**8/10/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD25339**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN91875, GN91885**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

General Chemistry

6

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD25339
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN91875	10	0.0	mg/l	500	493	98.6	88-110%

Associated Samples:
Batch GN91875: TD25339-1, TD25339-2, TD25339-3, TD25339-4
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD25339
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN91875	TD25339-2	mg/l	727	731	0.5	0-5%
pH	GN91885	TD25339-2	su	5.76	5.76	0.0	0-10%

Associated Samples:
Batch GN91875: TD25339-1, TD25339-2, TD25339-3, TD25339-4
Batch GN91885: TD25339-1, TD25339-2, TD25339-3, TD25339-4
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH - 13AT

SGS Job Number: TD26025

Sampling Date: 08/22/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 32

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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Test results relate only to samples analyzed.

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Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

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Sample Summary

Dow Chemical Company

Job No: TD26025

DOWMIM (Jacobs)
Project No: CHARLIE BURCH - 13AT

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD26025-1	08/22/18	13:40		08/22/18	AQ	Water	13AT-I-20180822
TD26025-2	08/22/18	14:00		08/22/18	AQ	Water	13AT-INT-20180822
TD26025-2D	08/22/18	14:00		08/22/18	AQ	Water Dup/MSD	13AT-INT-20180822 MSD
TD26025-2S	08/22/18	14:00		08/22/18	AQ	Water Matrix Spike	13AT-INT-20180822 MS
TD26025-3	08/22/18	14:15		08/22/18	AQ	Water	13AT-E-20180822
TD26025-4	08/22/18	00:00		08/22/18	AQ	Water	DUP-13AT-20180822
TD26025-5	08/22/18	00:00		08/22/18	AQ	Trip Blank Water	TB-13AT-20180822

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD26025

Site: DOWMIM (Jacobs) **Report Date** 9/4/2018 6:34:45 PM

4 Samples and 1 Trip Blank were collected on 08/22/2018 and received intact at SGS North America Inc (SGS) on 08/22/2018 and properly preserved in 1 cooler at 2 Deg C. The samples received an Accutest job number of TD26025. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5891

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD26025-2MS, TD26025-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN92257

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample TD26025-2DUP was used as the QC sample for Solids, Total Dissolved.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN92250

- Sample TD26025-2DUP was used as the QC sample for pH.
- TD26025-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 18.2 C.
- TD26025-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 19.7 C.
- TD26025-4 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 20.5 C.
- TD26025-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 20.9 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD26025
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 08/22/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD26025-1	**13AT-I-20180822**					
1,2-Dichloroethane		0.00085 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		688	10	2.2	mg/l	SM 2540C-2011
pH [a]		6.17			su	SM 4500H+ B-2011
TD26025-2	**13AT-INT-20180822**					
1,2-Dichloroethane		0.00078 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		674	10	2.2	mg/l	SM 2540C-2011
pH [b]		6.08			su	SM 4500H+ B-2011
TD26025-3	**13AT-E-20180822**					
Solids, Total Dissolved		667	10	2.2	mg/l	SM 2540C-2011
pH [c]		6.13			su	SM 4500H+ B-2011
TD26025-4	**DUP-13AT-20180822**					
1,2-Dichloroethane		0.00082 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		672	10	2.2	mg/l	SM 2540C-2011
pH [d]		6.11			su	SM 4500H+ B-2011
TD26025-5	**TB-13AT-20180822**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request.temp 18.2 c
(b) Field analysis required. Received out of hold time and analyzed by request.temp 19.7 c
(c) Field analysis required. Received out of hold time and analyzed by request.temp 20.9 c
(d) Field analysis required. Received out of hold time and analyzed by request.temp 20.5 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	13AT-I-20180822		
Lab Sample ID:	TD26025-1	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68705.D	1	08/27/18 12:37	SC	n/a	n/a	VZ5891
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00085	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-I-20180822		
Lab Sample ID:	TD26025-1	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	688	10	2.2	mg/l	1	08/24/18	BG	SM 2540C-2011
pH [a]	6.17			su	1	08/24/18 12:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 18.2 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID:	13AT-INT-20180822		
Lab Sample ID:	TD26025-2	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68702.D	1	08/27/18 11:23	SC	n/a	n/a	VZ5891
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00078	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-INT-20180822		
Lab Sample ID:	TD26025-2	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	674	10	2.2	mg/l	1	08/24/18	BG	SM 2540C-2011
pH [a]	6.08			su	1	08/24/18 12:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 19.7 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID: 13AT-E-20180822
Lab Sample ID: TD26025-3
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 08/22/18
Date Received: 08/22/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68719.D	1	08/27/18 19:35	SC	n/a	n/a	VZ5891
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-E-20180822		
Lab Sample ID:	TD26025-3	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	667	10	2.2	mg/l	1	08/24/18	BG	SM 2540C-2011
pH [a]	6.13			su	1	08/24/18 12:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 20.9 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID: DUP-13AT-20180822
Lab Sample ID: TD26025-4
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 08/22/18
Date Received: 08/22/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68720.D	1	08/27/18 19:59	SC	n/a	n/a	VZ5891
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00082	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-13AT-20180822		
Lab Sample ID:	TD26025-4	**Date Sampled:**	08/22/18
Matrix:	AQ - Water	**Date Received:**	08/22/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	672	10	2.2	mg/l	1	08/24/18	BG	SM 2540C-2011
pH [a]	6.11			su	1	08/24/18 12:00	MC	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp 20.5 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID:	TB-13AT-20180822		
Lab Sample ID:	TD26025-5	**Date Sampled:**	08/22/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	08/22/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z68721.D	1	08/27/18 20:23	SC	n/a	n/a	VZ5891
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

10165 Harwin Dr. Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD26025

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Atif Hasin Phone #:

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Total Dissolved Solids (TDS)	pH	VOC: 1,2-Dichloroethane	LAB USE ONLY
1	13AT-I-20180822	8/22/2018	13:40			4	3					1							X	X	X	
2	13AT-INT-20180822	8/22/2018	14:00			6	9					1							X	X	X	
3	13AT-E-20180822	8/22/2018	14:15			4	3					1							X	X	X	
4	DUP-13AT-20180822	8/22/2018				4	3					1							X	X	X	
5	TB-13AT-20180822	8/22/2018				2	2														X	

Analyze MS & MSD for this sample (VOCs)

FLAGGED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Labilink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

Containers:
3 Pcs. 40 ml. Voa 1 Liter Plastic Bottle

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	Atif Hasin	08/22/18 16:12	1	8/22/18 16:12	2		2	
3			3		4		4	
5			5		Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice / Cooler Temp. 2.0°C

SGS ACCUTEST

COOLER TEMP FORM

TC# TD26025

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 8-22-18

Client: Jacobs

Cooler Number: 1

Thermometer ID: DRa CF, °C 0 Corrected Temp, °C 2.0

SAMPLES CONTAINED IN COOLER

Form: SM027-06 Rev 10/24/2016

TD26025: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD26025 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 8/22/2018 4:12:00 PM **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (2/2);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:		
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑	☐	☐	☑	☐
2. Trip Blank listed on COC:	☑	☐	☐		
3. Samples preserved properly:	☑	☐			
4. VOCs headspace free:	☑	☐	☐		

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments Water matrix for all samples.

Sample Receipt Log

Job #: TD26025 **Date / Time Received:** 8/22/2018 4:12:00 PM 4:12:0 **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD26025-1	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR9	2	0	2
1	TD26025-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR9	2	0	2
1	TD26025-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-3	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR9	2	0	2
1	TD26025-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-4	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR9	2	0	2
1	TD26025-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-4	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2
1	TD26025-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2

Sample Receipt Log

Job #: TD26025 **Date / Time Received:** 8/22/2018 4:12:00 PM 4:12:0 **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD26025-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	2	0	2

Appendix A Laboratory Data Package Cover Page

TD26025 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	9/4/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**9/4/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD26025**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**GN92250, GN92257, VZ5891**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?			X			**2**	
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?		X					
		Were analytical duplicates analyzed at the appropriate frequency?		X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X					
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	9/4/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD26025				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	GN92250, GN92257, VZ5891				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**9/4/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD26025**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN92250, GN92257, VZ5891**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD26025
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5891-MB	Z68701.D	1	08/27/18	SC	n/a	n/a	VZ5891

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26025-1, TD26025-2, TD26025-3, TD26025-4, TD26025-5

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

Blank Spike Summary

Job Number: TD26025
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5891-BS	Z68699.D	1	08/27/18	SC	n/a	n/a	VZ5891

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26025-1, TD26025-2, TD26025-3, TD26025-4, TD26025-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	25.9	104	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD26025
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD26025-2MS	Z68703.D	1	08/27/18	SC	n/a	n/a	VZ5891
TD26025-2MSD	Z68704.D	1	08/27/18	SC	n/a	n/a	VZ5891
TD26025-2	Z68702.D	1	08/27/18	SC	n/a	n/a	VZ5891

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD26025-1, TD26025-2, TD26025-3, TD26025-4, TD26025-5

CAS No.	Compound	TD26025-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	0.78	J	25	24.4	94	25	25.2	98	3	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD26025-2	Limits
1868-53-7	Dibromofluoromethane	99%	102%	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	99%	101%	68-124%
2037-26-5	Toluene-D8	99%	101%	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	99%	99%	72-126%

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD26025
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN92257	10	0.0	mg/l	500	489	97.8	88-110%

Associated Samples:
Batch GN92257: TD26025-1, TD26025-2, TD26025-3, TD26025-4
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD26025
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN92257	TD26025-2	mg/l	674	670	0.6	0-5%
pH	GN92250	TD26025-2	su	6.08	6.08	0.0	0-10%

Associated Samples:
Batch GN92250: TD26025-1, TD26025-2, TD26025-3, TD26025-4
Batch GN92257: TD26025-1, TD26025-2, TD26025-3, TD26025-4
(*) Outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch - 13 Acre Quarterly

SGS Job Number: TD29005

Sampling Date: 10/17/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 34

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD29005

DOWMIM (Jacobs)
Project No: Charlie Burch - 13 Acre Quarterly

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
TD29005-1	10/17/18	16:00		10/18/18	AQ	Water	13AT-I-20181017
TD29005-2	10/17/18	16:15		10/18/18	AQ	Water	13AT-INT-20181017
TD29005-2D	10/17/18	16:15		10/18/18	AQ	Water Dup/MSD	13AT-INT-20181017 MSD
TD29005-2S	10/17/18	16:15		10/18/18	AQ	Water Matrix Spike	13AT-INT-20181017 MS
TD29005-3	10/17/18	16:30		10/18/18	AQ	Water	13AT-E-20181017
TD29005-4	10/17/18	00:00		10/18/18	AQ	Water	DW-13AT-20181017
TD29005-5	10/17/18	00:00		10/18/18	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29005

Site: DOWMIM (Jacobs) **Report Date** 11/1/2018 4:55:12 PM

4 Samples and 1 Trip Blank were collected on 10/17/2018 and received intact at SGS North America Inc (SGS) on 10/18/2018 and properly preserved in 1 cooler at 2.7 Deg C. The samples received an Accutest job number of TD29005. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1874

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

Matrix: AQ **Batch ID:** VZ5967

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29005-2MS, TD29005-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN93647

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample TD29005-4DUP was used as the QC sample for Solids, Total Dissolved.

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ **Batch ID:** GN93742

- Sample TD29140-1DUP was used as the QC sample for pH.
- TD29005-1 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.2 C.
- TD29005-3 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.6 C.
- TD29005-2 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.7 C.
- TD29005-4 for pH: Field analysis required. Received out of hold time and analyzed by request. Temp. 21.4 C.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29005
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/17/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29005-1	**13AT-I-20181017**					
1,2-Dichloroethane		0.00079 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		643	10	2.2	mg/l	SM 2540C-2011
pH [a]		7.91			su	SM 4500H+ B-2011
TD29005-2	**13AT-INT-20181017**					
1,2-Dichloroethane		0.00084 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		650	10	2.2	mg/l	SM 2540C-2011
pH [b]		7.88			su	SM 4500H+ B-2011
TD29005-3	**13AT-E-20181017**					
1,2-Dichloroethane		0.00043 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		648	10	2.2	mg/l	SM 2540C-2011
pH [c]		7.10			su	SM 4500H+ B-2011
TD29005-4	**DW-13AT-20181017**					
1,2-Dichloroethane		0.00078 J	0.0010	0.00040	mg/l	SW846 8260C
Solids, Total Dissolved		660	10	2.2	mg/l	SM 2540C-2011
pH [d]		7.17			su	SM 4500H+ B-2011
TD29005-5	**TRIP BLANK**					

No hits reported in this sample.

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.2 c
(b) Field analysis required. Received out of hold time and analyzed by request. temp. 21.7 c
(c) Field analysis required. Received out of hold time and analyzed by request. temp. 21.6 c
(d) Field analysis required. Received out of hold time and analyzed by request.temp. 21.4 c

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: 13AT-I-20181017
Lab Sample ID: TD29005-1
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/17/18
Date Received: 10/18/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70210.D	1	10/22/18 15:04	FT	n/a	n/a	VZ5967
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00079	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-I-20181017		
Lab Sample ID:	TD29005-1	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	643	10	2.2	mg/l	1	10/19/18	BG	SM 2540C-2011
pH [a]	7.91			su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.2 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID:	13AT-INT-20181017		
Lab Sample ID:	TD29005-2	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70199.D	1	10/22/18 10:34	FT	n/a	n/a	VZ5967
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00084	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-INT-20181017		
Lab Sample ID:	TD29005-2	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	650	10	2.2	mg/l	1	10/19/18	BG	SM 2540C-2011
pH [a]	7.88			su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.7 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID: 13AT-E-20181017
Lab Sample ID: TD29005-3
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/17/18
Date Received: 10/18/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70211.D	1	10/22/18 15:28	FT	n/a	n/a	VZ5967
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00043	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	13AT-E-20181017		
Lab Sample ID:	TD29005-3	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	648	10	2.2	mg/l	1	10/19/18	BG	SM 2540C-2011
pH [a]	7.10			su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request. temp. 21.6 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID: DW-13AT-20181017
Lab Sample ID: TD29005-4
Matrix: AQ - Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/17/18
Date Received: 10/18/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70212.D	1	10/22/18 15:53	FT	n/a	n/a	VZ5967
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00078	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DW-13AT-20181017		
Lab Sample ID:	TD29005-4	**Date Sampled:**	10/17/18
Matrix:	AQ - Water	**Date Received:**	10/18/18
		Percent Solids:	n/a
Project:	DOWMIM (Jacobs)		

General Chemistry

Analyte	Result	MQL	SDL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	660	10	2.2	mg/l	1	10/19/18	BG	SM 2540C-2011
pH [a]	7.17			su	1	10/23/18 17:00	PA	SM 4500H+ B-2011

(a) Field analysis required. Received out of hold time and analyzed by request.temp. 21.4 c

MQL = Method Quantitation Limit
SDL = Sample Detection Limit

U = Indicates a result < SDL
J = Indicates a result > = SDL but < MQL

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	TD29005-5	**Date Sampled:**	10/17/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478320.D	1	10/22/18 13:39	FI	n/a	n/a	VR1874
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		72-122%
17060-07-0	1,2-Dichloroethane-D4	118%		68-124%
2037-26-5	Toluene-D8	111%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/chsusa

FED-EX Tracking #:
Bottle Order Control #:
SGS Acculest Quote #:
SGS Acculest Job #: TD29005

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Anf Haiz Phone #: 832 419 9610

Project Information

Project Name: Charlie Burch - 13 Acre Quarterly
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank

SGS Acculest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	TDS & pH	LAB USE ONLY
1	13AT-I-2018 1017	10/17/18	1600																X	X	
2	13AT-INT-2018 1017	10/17/18	16:15																X	X	
3	13AT-E-2018 1017	10/17/18	1630																X	X	
4	DUP-13AT-20 18 1017	10/17/18	-																X	X	
5	Trip blank	10/17/18	-																X		

← Analyze MS/MSD for this (VOCs)

TAGGED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Acculest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1		10/18/18		10/18/18 1057		10-18-18 12:25		10/18/18 1225
2	Relinquished by Sampler:	Date Time: 755	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
3			3		4		4	
5	Relinquished by:	Date Time:	Received By: 5	Date Time:	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp.

SGS

COOLER TEMP FORM

SGS JOB# TD29005

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 10.16.18

Client: Jacobs (CH2M Hill)

Cooler Number: 1 of 1

Thermometer ID: IR-4 CF, °C 0.0 Corrected Temp, °C 2.7

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

5.1 5

TD29005: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: TD29005 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (2.7/2.7);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments Matrix is water

Sample Receipt Log

Job #: TD29005 **Date / Time Received:** 10/18/2018 **Initials:** BG

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29005-1	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR-4	2.7	0	2.7
1	TD29005-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-2	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-3	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR-4	2.7	0	2.7
1	TD29005-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-4	1000ml	1	3G	N/P	Note #2 - Preservative check not applicable.	IR-4	2.7	0	2.7
1	TD29005-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
1	TD29005-4	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	2.7	0	2.7
	TD29005-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Sample Receipt Log

Job #: TD29005 **Date / Time Received:** 10/18/2018 **Initials:** BG

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD29005-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD29005 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/1/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/1/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29005**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN93647, GN93742, VR1874, VZ5967**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?		X			**2**
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		X			**2**
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?	X				
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/1/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29005				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	GN93647, GN93742, VR1874, VZ5967				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/1/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29005**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**GN93647, GN93742, VR1874, VZ5967**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29005
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5967-MB	Z70197.D	1	10/22/18	FT	n/a	n/a	VZ5967

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29005-1, TD29005-2, TD29005-3, TD29005-4

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	105%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

Method Blank Summary

Job Number: TD29005
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1874-MB	R03478315.D	1	10/22/18	FI	n/a	n/a	VR1874

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29005-5

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	107%	72-122%
17060-07-0	1,2-Dichloroethane-D4	116%	68-124%
2037-26-5	Toluene-D8	112%	80-119%
460-00-4	4-Bromofluorobenzene	106%	72-126%

Blank Spike Summary

Job Number: TD29005
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5967-BS	Z70195.D	1	10/22/18	FT	n/a	n/a	VZ5967

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29005-1, TD29005-2, TD29005-3, TD29005-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	25.9	104	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	107%	72-122%
17060-07-0	1,2-Dichloroethane-D4	110%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29005
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1874-BS	R03478313.D	1	10/22/18	FI	n/a	n/a	VR1874
VR1874-BSD [a]	R03478316.D	1	10/22/18	FI	n/a	n/a	VR1874

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29005-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	25	19.5	78	19.6	78	1	68-121/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	108%	72-122%
17060-07-0	1,2-Dichloroethane-D4	115%	111%	68-124%
2037-26-5	Toluene-D8	112%	114%	80-119%
460-00-4	4-Bromofluorobenzene	104%	109%	72-126%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29005
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29005-2MS	Z70200.D	1	10/22/18	FT	n/a	n/a	VZ5967
TD29005-2MSD	Z70201.D	1	10/22/18	FT	n/a	n/a	VZ5967
TD29005-2	Z70199.D	1	10/22/18	FT	n/a	n/a	VZ5967

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29005-1, TD29005-2, TD29005-3, TD29005-4

CAS No.	Compound	TD29005-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	0.84	J	25	26.3	102	25	26.1	101	1	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD29005-2	Limits
1868-53-7	Dibromofluoromethane	106%	107%	105%	72-122%
17060-07-0	1,2-Dichloroethane-D4	113%	115%	113%	68-124%
2037-26-5	Toluene-D8	101%	103%	104%	80-119%
460-00-4	4-Bromofluorobenzene	102%	102%	106%	72-126%

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD29005
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN93647	10	0.0	mg/l	500	485	97.0	88-110%

Associated Samples:
Batch GN93647: TD29005-1, TD29005-2, TD29005-3, TD29005-4
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: TD29005
Account: DOWMIM - Dow Chemical Company
Project: DOWMIM (Jacobs)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN93647	TD29005-4	mg/l	660	660	0.0	0-5%
pH	GN93742	TD29140-1	su	9.57	9.57	0.0	0-10%

Associated Samples:
Batch GN93647: TD29005-1, TD29005-2, TD29005-3, TD29005-4
Batch GN93742: TD29005-1, TD29005-2, TD29005-3, TD29005-4
(*) Outside of QC limits

Appendix C
Laboratory Reports
(See Attached CD)

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch Semiannual Groundwaters

SGS Job Number: TD19824

Sampling Date: 04/17/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com

ATTN: Josh McFarlain

Total number of pages in report: 25

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-29) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD19824

DOWMIM (Jacobs)
Project No: Charlie Burch Semiannual Groundwaters

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD19824-1	04/17/18	09:51		04/18/18	AQ	Ground Water	MW-CB-45-20180417
TD19824-2	04/17/18	11:13		04/18/18	AQ	Ground Water	MW-CB-48-20180417
TD19824-3	04/17/18	12:50		04/18/18	AQ	Ground Water	MW-CB-44-20180417
TD19824-3D	04/17/18	12:50		04/18/18	AQ	Water Dup/MSD	MW-CB-44-20180417 MSD
TD19824-3S	04/17/18	12:50		04/18/18	AQ	Water Matrix Spike	MW-CB-44-20180417 MS
TD19824-4	04/17/18	00:00		04/18/18	AQ	Ground Water	MW-CB-44-20180417-DUP
TD19824-5	04/17/18	14:45		04/18/18	AQ	Ground Water	MW-CB-40-20180417
TD19824-6	04/17/18	09:00		04/18/18	AQ	Trip Blank Water	TB-01-20180417

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD19824

Site: DOWMIM (Jacobs) **Report Date** 5/2/2018 6:36:48 PM

5 Samples and 1 Trip Blank were collected on 04/17/2018 and received intact at SGS North America Inc (SGS) on 04/18/2018 and properly preserved in 1 cooler at 3.1 Deg C. The samples received an Accutest job number of TD19824. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

TD19824-5: Chain-of-custody and sample labels did not agree. The sample was logged in per the chain-of-custody.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VE2972

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD19824-3MS, TD19824-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD19824
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 04/17/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD19824-1	**MW-CB-45-20180417**					
1,2-Dichloroethane		0.0050	0.0010	0.00030	mg/l	SW846 8260C
TD19824-2	**MW-CB-48-20180417**					
1,2-Dichloroethane		0.00092 J	0.0010	0.00030	mg/l	SW846 8260C
TD19824-3	**MW-CB-44-20180417**					
No hits reported in this sample.						
TD19824-4	**MW-CB-44-20180417-DUP**					
No hits reported in this sample.						
TD19824-5	**MW-CB-40-20180417**					
1,2-Dichloroethane		0.0237	0.0010	0.00030	mg/l	SW846 8260C
TD19824-6	**TB-01-20180417**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-CB-45-20180417		
Lab Sample ID:	TD19824-1	**Date Sampled:**	04/17/18
Matrix:	AQ - Ground Water	**Date Received:**	04/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0067004.D	1	04/19/18 13:57	FI	n/a	n/a	VE2972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0050	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit J = Indicates an estimated value
MQL = Method Quantitation Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-48-20180417		
Lab Sample ID:	TD19824-2	**Date Sampled:**	04/17/18
Matrix:	AQ - Ground Water	**Date Received:**	04/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0067005.D	1	04/19/18 14:21	FI	n/a	n/a	VE2972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00092	0.0010	0.00030	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-44-20180417		
Lab Sample ID:	TD19824-3	**Date Sampled:**	04/17/18
Matrix:	AQ - Ground Water	**Date Received:**	04/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0066998.D	1	04/19/18 11:30	FI	n/a	n/a	VE2972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-44-20180417-DUP		
Lab Sample ID:	TD19824-4	**Date Sampled:**	04/17/18
Matrix:	AQ - Ground Water	**Date Received:**	04/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0067006.D	1	04/19/18 14:45	FI	n/a	n/a	VE2972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	103%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	97%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-40-20180417		
Lab Sample ID:	TD19824-5	**Date Sampled:**	04/17/18
Matrix:	AQ - Ground Water	**Date Received:**	04/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0067007.D	1	04/19/18 15:10	FI	n/a	n/a	VE2972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0237	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-01-20180417
Lab Sample ID: TD19824-6
Matrix: AQ - Trip Blank Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 04/17/18
Date Received: 04/18/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0067008.D	1	04/19/18 15:34	FI	n/a	n/a	VE2972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	108%		68-124%
2037-26-5	Toluene-D8	100%		80-119%
460-00-4	4-Bromofluorobenzene	96%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #:
Accutest Quote #:
Bottle Order Control #:
Accutest Job #: TD19824

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): Gavin Wagoner Phone #: 320-510-0347

Project Information

Project Name: Charlie Burch - Semiannual GW
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Josh Mcfarlain

Billing Information (If different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses

8260 -1,2-Dichloroethane

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260 -1,2-Dichloroethane	LAB USE ONLY
1	MW-CB-45-20180417	4/17/18	0951	FE/GW	GW	3	X												X	
2	MW-CB-48-20180417	4/17/18	1113	FE/GW	GW	3	X												X	
3	MW-CB-44-20180417	4/17/18	1250	FE/GW	GW	9	X												X	MS/MSD
4	MW-CB-44-20180417-DUP	4/17/18	—	FE/GW	GW	3	X												X	
5	MW-CB-40-20180417	4/17/18	1445	FE/GW	GW	3	X												X	
6	TB-01-20180417	4/17/18	0900	FE/GW	WW	3													X	

TAGGED BY:

VERIFIED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Gavin Wagoner	4/18/18 0805	1	2		2
2	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
3	Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not Intact	Preserved where applicable: On Ice: Cooler Temp. 3.1
			5			

5.1 5

TD19824: Chain of Custody
Page 1 of 4

SGS ACCUTEST

COOLER TEMP FORM

TC#

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 4-18-18

Client: Jacobs (Former CH2M Hill)

Cooler Number:

Thermometer ID: IB4 CF, °C 0.0 Corrected Temp, °C 3.1

SAMPLES CONTAINED IN COOLER

Jacobs (Former) CH2M Hill

ACCUTEST

Client: Jacobs / Former CH2M Hill

Project: Charlie Burch

Attn: Gavin Wagoner

Cooler: 1 of 1

LOT: 10D2661

Form: SM027-06 Rev 10/24/2016

TD19824: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD19824 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: 4/18/2018 9:45:00 AM **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (3.1/3.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☐		☑

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments -6 TB-01-20180417 was received with 2 vials not 3 as listed on chain-of-custody.
-5 Has CB-44 on bottle labels and CB-40 on chain-of-custody. Time and date match correctly.

Sample Receipt Log

Job #: TD19824 **Date / Time Received:** 4/18/2018 9:45:00 AM 9:45:0 **Initials:** DS

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD19824-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-3	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1
1	TD19824-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3.1	0	3.1

Appendix A Laboratory Data Package Cover Page

TD19824 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	5/2/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**5/2/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD19824**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**VE2972**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?			X			**2**	
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	5/2/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD19824				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	VE2972				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**5/2/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD19824**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VE2972**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is no included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD19824
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE2972-MB	E0066993.D	1	04/19/18	FI	n/a	n/a	VE2972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19824-1, TD19824-2, TD19824-3, TD19824-4, TD19824-5, TD19824-6

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	96%	72-126%

Blank Spike Summary

Job Number: TD19824
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE2972-BS	E0066994.D	1	04/19/18	FI	n/a	n/a	VE2972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19824-1, TD19824-2, TD19824-3, TD19824-4, TD19824-5, TD19824-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	21.8	87	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD19824
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD19824-3MS	E0067001.D	1	04/19/18	FI	n/a	n/a	VE2972
TD19824-3MSD	E0067002.D	1	04/19/18	FI	n/a	n/a	VE2972
TD19824-3	E0066998.D	1	04/19/18	FI	n/a	n/a	VE2972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD19824-1, TD19824-2, TD19824-3, TD19824-4, TD19824-5, TD19824-6

CAS No.	Compound	TD19824-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	1.0	U	25	19.9	80	25	20.6	82	3	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD19824-3	Limits
1868-53-7	Dibromofluoromethane	101%	100%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	100%	99%	68-124%
2037-26-5	Toluene-D8	99%	99%	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	98%	97%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch - Annual Sampling

SGS Job Number: TD28973

Sampling Date: 10/16/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **38**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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Sample Summary

Dow Chemical Company

Job No: TD28973

DOWMIM (Jacobs)
Project No: Charlie Burch - Annual Sampling

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD28973-1	10/16/18	15:10		10/17/18	AQ	Ground Water	RW-CB-4R-20181610
TD28973-2	10/16/18	15:25		10/17/18	AQ	Ground Water	RW-CB-3R-20181610
TD28973-3	10/16/18	15:25		10/17/18	AQ	Ground Water	RW-CB-2R-20181610
TD28973-4	10/16/18	15:54		10/17/18	AQ	Ground Water	RW-CB-3D-20181610
TD28973-4D	10/16/18	15:54		10/17/18	AQ	Water Dup/MSD	RW-CB-3D-20181610 MSD
TD28973-4S	10/16/18	15:54		10/17/18	AQ	Water Matrix Spike	RW-CB-3D-20181610 MS
TD28973-5	10/16/18	15:55		10/17/18	AQ	Ground Water	RW-CB-5R-20181610
TD28973-6	10/16/18	00:00		10/17/18	AQ	Ground Water	DUP-CB-XX-20181610
TD28973-7	10/16/18	13:30		10/17/18	AQ	Trip Blank Water	TB-01-20181610

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD28973

Site: DOWMIM (Jacobs) **Report Date** 10/31/2018 4:54:16 P

6 Samples and 1 Trip Blank were collected on 10/16/2018 and received intact at SGS North America Inc (SGS) on 10/17/2018 and properly preserved in 2 coolers at 1.8 and 2 Deg C. The samples received an Accutest job number of TD28973. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ5966

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD28973-4MS, TD28973-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP47597

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) TD28973-4MS, TD28973-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD28973
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/16/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD28973-1	**RW-CB-4R-20181610**					
Benzene		0.00077 J	0.0010	0.00040	mg/l	SW846 8260C
1,2-Dichloroethane		0.0587	0.0010	0.00040	mg/l	SW846 8260C
TD28973-2	**RW-CB-3R-20181610**					
1,2-Dichloroethane		0.0473	0.0010	0.00040	mg/l	SW846 8260C
TD28973-3	**RW-CB-2R-20181610**					
1,2-Dichloroethane		0.0142	0.0010	0.00040	mg/l	SW846 8260C
TD28973-4	**RW-CB-3D-20181610**					
1,2-Dichloroethane		0.0133	0.0010	0.00040	mg/l	SW846 8260C
TD28973-5	**RW-CB-5R-20181610**					
1,2-Dichloroethane		0.0250	0.0010	0.00040	mg/l	SW846 8260C
TD28973-6	**DUP-CB-XX-20181610**					
1,2-Dichloroethane		0.0125	0.0010	0.00040	mg/l	SW846 8260C
TD28973-7	**TB-01-20181610**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RW-CB-4R-20181610		
Lab Sample ID:	TD28973-1	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70174.D	1	10/19/18 12:19	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00077	0.0010	0.00040	mg/l	J
107-06-2	1,2-Dichloroethane	0.0587	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit J = Indicates an estimated value
MQL = Method Quantitation Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-4R-20181610		
Lab Sample ID:	TD28973-1	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30916.D	1	10/19/18 14:07	ZT	10/19/18 05:10	OP47597	EW1661
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Charlie Burch-Annual Sampling

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	0.0014 U	0.0051	0.0014	mg/l	
62-53-3	Aniline	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-66%
4165-62-2	Phenol-d5	21%		10-63%
118-79-6	2,4,6-Tribromophenol	90%		32-128%
4165-60-0	Nitrobenzene-d5	77%		29-115%
321-60-8	2-Fluorobiphenyl	80%		34-113%
1718-51-0	Terphenyl-d14	97%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3R-20181610		
Lab Sample ID:	TD28973-2	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70175.D	1	10/19/18 12:43	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0473	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	106%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3R-20181610		
Lab Sample ID:	TD28973-2	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30917.D	1	10/19/18 14:34	ZT	10/19/18 05:10	OP47597	EW1661
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Charlie Burch-Annual Sampling

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	0.0014 U	0.0051	0.0014	mg/l	
62-53-3	Aniline	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-66%
4165-62-2	Phenol-d5	17%		10-63%
118-79-6	2,4,6-Tribromophenol	76%		32-128%
4165-60-0	Nitrobenzene-d5	66%		29-115%
321-60-8	2-Fluorobiphenyl	67%		34-113%
1718-51-0	Terphenyl-d14	84%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-2R-20181610		
Lab Sample ID:	TD28973-3	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70176.D	1	10/19/18 13:08	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0142	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	108%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-2R-20181610		
Lab Sample ID:	TD28973-3	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30918.D	1	10/19/18 15:00	ZT	10/19/18 05:10	OP47597	EW1661
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Charlie Burch-Annual Sampling

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0010 U	0.0050	0.0010	mg/l	
95-48-7	2-Methylphenol	0.0014 U	0.0050	0.0014	mg/l	
62-53-3	Aniline	0.0014 U	0.0050	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		10-66%
4165-62-2	Phenol-d5	19%		10-63%
118-79-6	2,4,6-Tribromophenol	76%		32-128%
4165-60-0	Nitrobenzene-d5	62%		29-115%
321-60-8	2-Fluorobiphenyl	65%		34-113%
1718-51-0	Terphenyl-d14	81%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3D-20181610		
Lab Sample ID:	TD28973-4	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70169.D	1	10/19/18 10:17	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0133	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	106%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-3D-20181610		
Lab Sample ID:	TD28973-4	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30913.D	1	10/19/18 12:47	ZT	10/19/18 05:10	OP47597	EW1661
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Charlie Burch-Annual Sampling

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	0.0014 U	0.0051	0.0014	mg/l	
62-53-3	Aniline	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	25%		10-66%
4165-62-2	Phenol-d5	19%		10-63%
118-79-6	2,4,6-Tribromophenol	74%		32-128%
4165-60-0	Nitrobenzene-d5	65%		29-115%
321-60-8	2-Fluorobiphenyl	67%		34-113%
1718-51-0	Terphenyl-d14	87%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-CB-5R-20181610
Lab Sample ID: TD28973-5
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/16/18
Date Received: 10/17/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70177.D	1	10/19/18 13:32	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0250	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	117%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-5R-20181610		
Lab Sample ID:	TD28973-5	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30919.D	1	10/19/18 15:27	ZT	10/19/18 05:10	OP47597	EW1661
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Charlie Burch-Annual Sampling

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	0.0014 U	0.0051	0.0014	mg/l	
62-53-3	Aniline	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	24%		10-66%
4165-62-2	Phenol-d5	16%		10-63%
118-79-6	2,4,6-Tribromophenol	80%		32-128%
4165-60-0	Nitrobenzene-d5	66%		29-115%
321-60-8	2-Fluorobiphenyl	69%		34-113%
1718-51-0	Terphenyl-d14	93%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DUP-CB-XX-20181610
Lab Sample ID: TD28973-6
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/16/18
Date Received: 10/17/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70178.D	1	10/19/18 13:57	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.0125	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-CB-XX-20181610		
Lab Sample ID:	TD28973-6	**Date Sampled:**	10/16/18
Matrix:	AQ - Ground Water	**Date Received:**	10/17/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W30920.D	1	10/19/18 15:54	ZT	10/19/18 05:10	OP47597	EW1661
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Charlie Burch-Annual Sampling

CAS No.	Compound	Result	MQL	SDL	Units	Q
105-67-9	2,4-Dimethylphenol	0.0011 U	0.0051	0.0011	mg/l	
95-48-7	2-Methylphenol	0.0014 U	0.0051	0.0014	mg/l	
62-53-3	Aniline	0.0014 U	0.0051	0.0014	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		10-66%
4165-62-2	Phenol-d5	15%		10-63%
118-79-6	2,4,6-Tribromophenol	67%		32-128%
4165-60-0	Nitrobenzene-d5	60%		29-115%
321-60-8	2-Fluorobiphenyl	62%		34-113%
1718-51-0	Terphenyl-d14	78%		23-138%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20181610		
Lab Sample ID:	TD28973-7	**Date Sampled:**	10/16/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/17/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70173.D	1	10/19/18 11:54	FI	n/a	n/a	VZ5966
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	106%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

SGS
10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD28973

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): DAVID ROMAN Phone #: 2102400923

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 704111.01.GW
Client Purchase Order #:
Project Manager: Josh McFarlain

Billing Information (If different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2-4-Dimethylphenol by 8270	LAB USE ONLY
1	RW-CB-4R-20181610	10/16/18	1510	FECH	GW	5	3					2								X		X	
2	RW-CB-3R-20181610	10/16/18	1525	DR LG	GW	5	3					2								X		X	
3	RW-CB-2R-20181610	10/16/18	1525	BE LG	GW	5	3					2								X		X	
4	RW-CB-3D-20181610-MS/MSD	10/16/18	1554	DR LG	GW	15	9					6								X		X	
5	RW-CB-5R-20181610	10/16/18	1555	FE CH	GW	5	3					2								X		X	
6	DUP-CB-XX-20181610	10/16/18	NG	DR LG	GW	5	3					2								X		X	
7	TB-01-20181610	10/16/18	1330	DR	LIQ	2	2																

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM29283
Labels read wells as "MW" ID. Should be "RW" ID on labels
MS/MSD @ RW-CB-3D-20181610

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	David Roman	10/17/18 0730	[illegible] 10.17.18	7.59				
2					[illegible] 10-17-18	10.46	[illegible]	10/17/18 1046
3								
4								
5								

Custody Seal #: Intact / Not intact — Preserved where applicable — On Ice — Cooler Temp.

SGS

COOLER TEMP FORM

SGS JOB# TD28973

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 10-17-18

Client: [illegible]

Cooler Number: 1

Thermometer ID: DR3 CF, °C 0 Corrected Temp, °C 1.8

SAMPLES CONTAINED IN COOLER

3D
5R > 2 LAG

All vials
TB

SM027
Rev. 7
1/3/18

TD28973: Chain of Custody
Page 2 of 6

SGS

COOLER TEMP FORM

SGS JOB# TD28973

Delivered by (circle one): FedEx/UPS (ALGC Driver) Client

Date: 10/17/18

Client:

Cooler Number: 2

Thermometer ID: IR3 CF, °C 0 Corrected Temp, °C 2.0

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

TD28973: Chain of Custody
Page 3 of 6

SGS Sample Receipt Summary

Job Number: TD28973 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 2 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.8/1.8); #2: (2/2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD28973 **Date / Time Received:** 10/18/2018 10:46:00 AM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD28973-1	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-1	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-2	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-2	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-3	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-3	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-4	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	LAG	6	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-4	LAG	7	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-4	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Sample Receipt Log

Job #: TD28973 **Date / Time Received:** 10/18/2018 10:46:00 AM **Initials:** EC

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD28973-4	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	LAG	11	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-4	LAG	12	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-4	40ml	13	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-4	40ml	15	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-5	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-5	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-5	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-5	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-6	LAG	1	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-6	LAG	2	4DD	N/P	Note #2 - Preservative check not applicable.				
	TD28973-6	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-6	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-6	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-7	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD28973-7	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD28973 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	10/31/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast	LRC Date:	10/31/2018					
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD28973					
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	OP47597, VZ5966					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	OI	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	OI	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	OI	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	O	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	OI	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	OI	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?				X			
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?		X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	OI	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**2**	
R10	OI	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	10/31/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD28973				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	OP47597, VZ5966				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**10/31/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD28973**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**OP47597, VZ5966**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is no included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD28973
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5966-MB	Z70168.D	1	10/19/18	FI	n/a	n/a	VZ5966

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD28973-1, TD28973-2, TD28973-3, TD28973-4, TD28973-5, TD28973-6, TD28973-7

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	114%	68-124%
2037-26-5	Toluene-D8	105%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

Blank Spike Summary

Job Number: TD28973
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5966-BS	Z70165.D	1	10/19/18	FI	n/a	n/a	VZ5966

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD28973-1, TD28973-2, TD28973-3, TD28973-4, TD28973-5, TD28973-6, TD28973-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	68-119
107-06-2	1,2-Dichloroethane	25	26.4	106	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	109%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD28973
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD28973-4MS	Z70170.D	1	10/19/18	FI	n/a	n/a	VZ5966
TD28973-4MSD	Z70171.D	1	10/19/18	FI	n/a	n/a	VZ5966
TD28973-4	Z70169.D	1	10/19/18	FI	n/a	n/a	VZ5966

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD28973-1, TD28973-2, TD28973-3, TD28973-4, TD28973-5, TD28973-6, TD28973-7

CAS No.	Compound	TD28973-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0	U	25	23.2	93	25	23.7	95	2	68-119/12
107-06-2	1,2-Dichloroethane	13.3		25	38.9	102	25	39.8	106	2	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD28973-4	Limits
1868-53-7	Dibromofluoromethane	107%	109%	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	111%	111%	115%	68-124%
2037-26-5	Toluene-D8	103%	103%	106%	80-119%
460-00-4	4-Bromofluorobenzene	101%	101%	106%	72-126%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD28973
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47597-MB	W30912.D	1	10/19/18	ZT	10/19/18	OP47597	EW1661

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD28973-1, TD28973-2, TD28973-3, TD28973-4, TD28973-5, TD28973-6

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	1.4	ug/l	
62-53-3	Aniline	ND	5.0	1.4	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	23%	10-66%
4165-62-2	Phenol-d5	15%	10-63%
118-79-6	2,4,6-Tribromophenol	73%	32-128%
4165-60-0	Nitrobenzene-d5	61%	29-115%
321-60-8	2-Fluorobiphenyl	61%	34-113%
1718-51-0	Terphenyl-d14	97%	23-138%

Blank Spike Summary

Job Number: TD28973
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47597-BS	O27324.D	1	10/19/18	ZT	10/19/18	OP47597	EO1546

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD28973-1, TD28973-2, TD28973-3, TD28973-4, TD28973-5, TD28973-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
105-67-9	2,4-Dimethylphenol	50	43.1	86	39-107
95-48-7	2-Methylphenol	50	31.0	62	33-93
62-53-3	Aniline	50	30.9	62	15-112

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	34%	10-66%
4165-62-2	Phenol-d5	24%	10-63%
118-79-6	2,4,6-Tribromophenol	95%	32-128%
4165-60-0	Nitrobenzene-d5	85%	29-115%
321-60-8	2-Fluorobiphenyl	80%	34-113%
1718-51-0	Terphenyl-d14	91%	23-138%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD28973
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47597-MS1	W30914.D	1	10/19/18	ZT	10/19/18	OP47597	EW1661
OP47597-MSD1	W30915.D	1	10/19/18	ZT	10/19/18	OP47597	EW1661
TD28973-4	W30913.D	1	10/19/18	ZT	10/19/18	OP47597	EW1661

The QC reported here applies to the following samples: **Method:** SW846 8270D

TD28973-1, TD28973-2, TD28973-3, TD28973-4, TD28973-5, TD28973-6

CAS No.	Compound	TD28973-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	5.1 U		51	31.6	62	51	33.3	65	5	39-107/32
95-48-7	2-Methylphenol	5.1 U		51	23.0	45	51	24.4	48	6	33-93/35
62-53-3	Aniline	5.1 U		51	29.9	59	51	28.4	56	5	15-112/34

CAS No.	Surrogate Recoveries	MS	MSD	TD28973-4	Limits
367-12-4	2-Fluorophenol	25%	27%	25%	10-66%
4165-62-2	Phenol-d5	18%	19%	19%	10-63%
118-79-6	2,4,6-Tribromophenol	73%	76%	74%	32-128%
4165-60-0	Nitrobenzene-d5	62%	65%	65%	29-115%
321-60-8	2-Fluorobiphenyl	68%	71%	67%	34-113%
1718-51-0	Terphenyl-d14	72%	75%	87%	23-138%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch Annual Sampling / 701411.01.GW

SGS Job Number: TD29032

Sampling Date: 10/17/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **59**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

November 21, 2018

Jacobs

5995 Rogerdale Rd.

Houston, TX 77072

ATTN: Josh McFarlain

RE: Accutest job TD29032 Reissue

Dear Mr. McFarlain:

The report for TD29032 has been updated to correct the sample ID for TD29032-3 per an email received from John Ynfante.

I apologize for any inconvenience. Please feel free to contact me if I can be of further assistance.

Sincerely,

Elessa Sommers

Elessa Sommers

Project Manager

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Sample Summary

Dow Chemical Company

Job No: TD29032

DOWMIM (Jacobs)
Project No: Charlie Burch Annual Sampling / 701411.01.GW

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29032-1	10/17/18	09:30		10/18/18	AQ	Ground Water	MW-CB-7B-181017
TD29032-2	10/17/18	09:40		10/18/18	AQ	Ground Water	MW-CB-4-181017
TD29032-3	10/17/18	10:50		10/18/18	AQ	Ground Water	MW-CB-1BS-181017
TD29032-4	10/17/18	10:52		10/18/18	AQ	Ground Water	RW-CB-2-181017
TD29032-5	10/17/18	11:53		10/18/18	AQ	Ground Water	RW-CB-4-181017
TD29032-6	10/17/18	11:55		10/18/18	AQ	Ground Water	MW-CB-1B-181017
TD29032-7	10/17/18	13:54		10/18/18	AQ	Ground Water	MW-CB-1A-181017
TD29032-8	10/17/18	14:15		10/18/18	AQ	Ground Water	OW-2-181017
TD29032-9	10/17/18	14:55		10/18/18	AQ	Ground Water	MW-CB-2A-181017
TD29032-10	10/17/18	15:45		10/18/18	AQ	Ground Water	MW-CB-2B-181017
TD29032-11	10/17/18	15:50		10/18/18	AQ	Ground Water	OBS-2-181017
TD29032-12	10/17/18	16:21		10/18/18	AQ	Ground Water	OBS-1-181017
TD29032-13	10/17/18	17:02		10/18/18	AQ	Ground Water	EAB-MW-3-181017

Sample Summary
(continued)

Dow Chemical Company

Job No: TD29032

DOWMIM (Jacobs)
Project No: Charlie Burch Annual Sampling / 701411.01.GW

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
TD29032-14	10/17/18	00:00		10/18/18	AQ	Ground Water	DUP-02-181017
TD29032-15	10/17/18	00:00		10/18/18	AQ	Ground Water	DUP-03-181017
TD29032-16	10/17/18	07:30		10/18/18	AQ	Trip Blank Water	TB-01-181017
TD29032-17	10/17/18	08:10		10/18/18	AQ	Field Blank Water	ERB-T2-181017

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29032

Site: DOWMIM (Jacobs) **Report Date** 11/2/2018 12:09:00 P

15 Samples, 1 Field Blank, and 1 Trip Blank were collected on 10/17/2018 and received intact at SGS North America Inc (SGS) on 10/18/2018 and properly preserved in 1 cooler at 1 Deg C. The samples received an Accutest job number of TD29032. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1876

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29138-12MS, TD29138-12MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- TD29032-13 , TD29032-15 for Acetone: CCV recovery was above method acceptance criteria. This target analyte was not detected in the samples.

Matrix: AQ **Batch ID:** VR1877

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

Matrix: AQ **Batch ID:** VZ5968

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29032
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/17/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29032-1	**MW-CB-7B-181017**					
No hits reported in this sample.						
TD29032-2	**MW-CB-4-181017**					
No hits reported in this sample.						
TD29032-3	**MW-CB-1BS-181017**					
1,2-Dichloroethane		0.0022	0.0010	0.00040	mg/l	SW846 8260C
TD29032-4	**RW-CB-2-181017**					
No hits reported in this sample.						
TD29032-5	**RW-CB-4-181017**					
1,2-Dichloroethane		0.0013	0.0010	0.00040	mg/l	SW846 8260C
TD29032-6	**MW-CB-1B-181017**					
1,2-Dichloroethane		0.0015	0.0010	0.00040	mg/l	SW846 8260C
TD29032-7	**MW-CB-1A-181017**					
1,2-Dichloroethane		0.0088	0.0010	0.00040	mg/l	SW846 8260C
TD29032-8	**OW-2-181017**					
1,2-Dichloroethane		0.0015	0.0010	0.00040	mg/l	SW846 8260C
TD29032-9	**MW-CB-2A-181017**					
No hits reported in this sample.						
TD29032-10	**MW-CB-2B-181017**					
1,2-Dichloroethane		0.0133	0.0010	0.00040	mg/l	SW846 8260C
TD29032-11	**OBS-2-181017**					
No hits reported in this sample.						

Summary of Hits

Job Number: TD29032
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/17/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29032-12	**OBS-1-181017**					
No hits reported in this sample.						
TD29032-13	**EAB-MW-3-181017**					
1,2-Dichloroethane		0.0326	0.0010	0.00040	mg/l	SW846 8260C
TD29032-14	**DUP-02-181017**					
1,2-Dichloroethane		0.0061	0.0010	0.00040	mg/l	SW846 8260C
TD29032-15	**DUP-03-181017**					
Chloroethane		0.00041 J	0.0010	0.00035	mg/l	SW846 8260C
1,2-Dichloroethane		0.0325	0.0010	0.00040	mg/l	SW846 8260C
TD29032-16	**TB-01-181017**					
No hits reported in this sample.						
TD29032-17	**ERB-T2-181017**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-CB-7B-181017		
Lab Sample ID:	TD29032-1	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70227.D	1	10/22/18 22:00	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-4-181017		
Lab Sample ID:	TD29032-2	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70228.D	1	10/22/18 22:24	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	108%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-1BS-181017		
Lab Sample ID:	TD29032-3	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70229.D	1	10/22/18 22:49	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0022	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-2-181017		
Lab Sample ID:	TD29032-4	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70230.D	1	10/22/18 23:13	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-CB-4-181017		
Lab Sample ID:	TD29032-5	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70231.D	1	10/22/18 23:37	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0013	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	113%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-1B-181017		
Lab Sample ID:	TD29032-6	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70232.D	1	10/23/18 00:02	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0015	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-1A-181017		
Lab Sample ID:	TD29032-7	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70233.D	1	10/23/18 00:25	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0088	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OW-2-181017		
Lab Sample ID:	TD29032-8	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70234.D	1	10/23/18 00:50	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0015	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	108%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-2A-181017		
Lab Sample ID:	TD29032-9	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70235.D	1	10/23/18 01:14	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-2B-181017		
Lab Sample ID:	TD29032-10	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70236.D	1	10/23/18 01:39	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0133	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OBS-2-181017		
Lab Sample ID:	TD29032-11	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478402.D	1	10/24/18 01:55	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	118%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OBS-1-181017		
Lab Sample ID:	TD29032-12	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478403.D	1	10/24/18 02:21	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-122%
17060-07-0	1,2-Dichloroethane-D4	120%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EAB-MW-3-181017		
Lab Sample ID:	TD29032-13	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478381.D	1	10/23/18 16:38	FI	n/a	n/a	VR1876
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
75-27-4	Bromodichloromethane	0.00039 U	0.0010	0.00039	mg/l	
75-25-2	Bromoform	0.00036 U	0.0010	0.00036	mg/l	
108-90-7	Chlorobenzene	0.00039 U	0.0010	0.00039	mg/l	
75-00-3	Chloroethane	0.00035 U	0.0010	0.00035	mg/l	
67-66-3	Chloroform	0.00039 U	0.0010	0.00039	mg/l	
75-15-0	Carbon disulfide	0.0010 U	0.0050	0.0010	mg/l	
56-23-5	Carbon tetrachloride	0.00035 U	0.0010	0.00035	mg/l	
75-34-3	1,1-Dichloroethane	0.00043 U	0.0010	0.00043	mg/l	
75-35-4	1,1-Dichloroethylene	0.00036 U	0.0010	0.00036	mg/l	
107-06-2	1,2-Dichloroethane	0.0326	0.0010	0.00040	mg/l	
78-87-5	1,2-Dichloropropane	0.00038 U	0.0010	0.00038	mg/l	
124-48-1	Dibromochloromethane	0.00046 U	0.0010	0.00046	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-01-5	cis-1,3-Dichloropropene	0.00039 U	0.0010	0.00039	mg/l	
156-60-5	trans-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-02-6	trans-1,3-Dichloropropene	0.00037 U	0.0010	0.00037	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
591-78-6	2-Hexanone	0.0032 U	0.010	0.0032	mg/l	
108-10-1	4-Methyl-2-pentanone	0.0029 U	0.010	0.0029	mg/l	
74-83-9	Methyl bromide	0.00030 U	0.0010	0.00030	mg/l	
74-87-3	Methyl chloride	0.00042 U	0.0010	0.00042	mg/l	
75-09-2	Methylene chloride	0.0016 U	0.0050	0.0016	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
100-42-5	Styrene	0.00040 U	0.0010	0.00040	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00033 U	0.0010	0.00033	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.00046 U	0.0010	0.00046	mg/l	
79-00-5	1,1,2-Trichloroethane	0.00047 U	0.0010	0.00047	mg/l	
127-18-4	Tetrachloroethylene	0.00037 U	0.0010	0.00037	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
79-01-6	Trichloroethylene	0.00041 U	0.0010	0.00041	mg/l	

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EAB-MW-3-181017		
Lab Sample ID:	TD29032-13	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
75-01-4	Vinyl chloride	0.00033 U	0.0010	0.00033	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	119%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-02-181017		
Lab Sample ID:	TD29032-14	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70237.D	1	10/23/18 02:04	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0061	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-03-181017		
Lab Sample ID:	TD29032-15	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478382.D	1	10/23/18 17:04	FI	n/a	n/a	VR1876
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone [a]	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
75-27-4	Bromodichloromethane	0.00039 U	0.0010	0.00039	mg/l	
75-25-2	Bromoform	0.00036 U	0.0010	0.00036	mg/l	
108-90-7	Chlorobenzene	0.00039 U	0.0010	0.00039	mg/l	
75-00-3	Chloroethane	0.00041	0.0010	0.00035	mg/l	J
67-66-3	Chloroform	0.00039 U	0.0010	0.00039	mg/l	
75-15-0	Carbon disulfide	0.0010 U	0.0050	0.0010	mg/l	
56-23-5	Carbon tetrachloride	0.00035 U	0.0010	0.00035	mg/l	
75-34-3	1,1-Dichloroethane	0.00043 U	0.0010	0.00043	mg/l	
75-35-4	1,1-Dichloroethylene	0.00036 U	0.0010	0.00036	mg/l	
107-06-2	1,2-Dichloroethane	0.0325	0.0010	0.00040	mg/l	
78-87-5	1,2-Dichloropropane	0.00038 U	0.0010	0.00038	mg/l	
124-48-1	Dibromochloromethane	0.00046 U	0.0010	0.00046	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-01-5	cis-1,3-Dichloropropene	0.00039 U	0.0010	0.00039	mg/l	
156-60-5	trans-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-02-6	trans-1,3-Dichloropropene	0.00037 U	0.0010	0.00037	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
591-78-6	2-Hexanone	0.0032 U	0.010	0.0032	mg/l	
108-10-1	4-Methyl-2-pentanone	0.0029 U	0.010	0.0029	mg/l	
74-83-9	Methyl bromide	0.00030 U	0.0010	0.00030	mg/l	
74-87-3	Methyl chloride	0.00042 U	0.0010	0.00042	mg/l	
75-09-2	Methylene chloride	0.0016 U	0.0050	0.0016	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
100-42-5	Styrene	0.00040 U	0.0010	0.00040	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00033 U	0.0010	0.00033	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.00046 U	0.0010	0.00046	mg/l	
79-00-5	1,1,2-Trichloroethane	0.00047 U	0.0010	0.00047	mg/l	
127-18-4	Tetrachloroethylene	0.00037 U	0.0010	0.00037	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
79-01-6	Trichloroethylene	0.00041 U	0.0010	0.00041	mg/l	

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-03-181017		
Lab Sample ID:	TD29032-15	**Date Sampled:**	10/17/18
Matrix:	AQ - Ground Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
75-01-4	Vinyl chloride	0.00033 U	0.0010	0.00033	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	117%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

(a) CCV recovery was above method acceptance criteria. This target analyte was not detected in the sample.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-181017		
Lab Sample ID:	TD29032-16	**Date Sampled:**	10/17/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478400.D	1	10/24/18 01:02	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
75-27-4	Bromodichloromethane	0.00039 U	0.0010	0.00039	mg/l	
75-25-2	Bromoform	0.00036 U	0.0010	0.00036	mg/l	
108-90-7	Chlorobenzene	0.00039 U	0.0010	0.00039	mg/l	
75-00-3	Chloroethane	0.00035 U	0.0010	0.00035	mg/l	
67-66-3	Chloroform	0.00039 U	0.0010	0.00039	mg/l	
75-15-0	Carbon disulfide	0.0010 U	0.0050	0.0010	mg/l	
56-23-5	Carbon tetrachloride	0.00035 U	0.0010	0.00035	mg/l	
75-34-3	1,1-Dichloroethane	0.00043 U	0.0010	0.00043	mg/l	
75-35-4	1,1-Dichloroethylene	0.00036 U	0.0010	0.00036	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
78-87-5	1,2-Dichloropropane	0.00038 U	0.0010	0.00038	mg/l	
124-48-1	Dibromochloromethane	0.00046 U	0.0010	0.00046	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-01-5	cis-1,3-Dichloropropene	0.00039 U	0.0010	0.00039	mg/l	
156-60-5	trans-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-02-6	trans-1,3-Dichloropropene	0.00037 U	0.0010	0.00037	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
591-78-6	2-Hexanone	0.0032 U	0.010	0.0032	mg/l	
108-10-1	4-Methyl-2-pentanone	0.0029 U	0.010	0.0029	mg/l	
74-83-9	Methyl bromide	0.00030 U	0.0010	0.00030	mg/l	
74-87-3	Methyl chloride	0.00042 U	0.0010	0.00042	mg/l	
75-09-2	Methylene chloride	0.0016 U	0.0050	0.0016	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
100-42-5	Styrene	0.00040 U	0.0010	0.00040	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00033 U	0.0010	0.00033	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.00046 U	0.0010	0.00046	mg/l	
79-00-5	1,1,2-Trichloroethane	0.00047 U	0.0010	0.00047	mg/l	
127-18-4	Tetrachloroethylene	0.00037 U	0.0010	0.00037	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
79-01-6	Trichloroethylene	0.00041 U	0.0010	0.00041	mg/l	

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-181017		
Lab Sample ID:	TD29032-16	**Date Sampled:**	10/17/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
75-01-4	Vinyl chloride	0.00033 U	0.0010	0.00033	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	112%		68-124%
2037-26-5	Toluene-D8	115%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-T2-181017		
Lab Sample ID:	TD29032-17	**Date Sampled:**	10/17/18
Matrix:	AQ - Field Blank Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478404.D	1	10/24/18 02:48	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
75-27-4	Bromodichloromethane	0.00039 U	0.0010	0.00039	mg/l	
75-25-2	Bromoform	0.00036 U	0.0010	0.00036	mg/l	
108-90-7	Chlorobenzene	0.00039 U	0.0010	0.00039	mg/l	
75-00-3	Chloroethane	0.00035 U	0.0010	0.00035	mg/l	
67-66-3	Chloroform	0.00039 U	0.0010	0.00039	mg/l	
75-15-0	Carbon disulfide	0.0010 U	0.0050	0.0010	mg/l	
56-23-5	Carbon tetrachloride	0.00035 U	0.0010	0.00035	mg/l	
75-34-3	1,1-Dichloroethane	0.00043 U	0.0010	0.00043	mg/l	
75-35-4	1,1-Dichloroethylene	0.00036 U	0.0010	0.00036	mg/l	
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	
78-87-5	1,2-Dichloropropane	0.00038 U	0.0010	0.00038	mg/l	
124-48-1	Dibromochloromethane	0.00046 U	0.0010	0.00046	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-01-5	cis-1,3-Dichloropropene	0.00039 U	0.0010	0.00039	mg/l	
156-60-5	trans-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-02-6	trans-1,3-Dichloropropene	0.00037 U	0.0010	0.00037	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
591-78-6	2-Hexanone	0.0032 U	0.010	0.0032	mg/l	
108-10-1	4-Methyl-2-pentanone	0.0029 U	0.010	0.0029	mg/l	
74-83-9	Methyl bromide	0.00030 U	0.0010	0.00030	mg/l	
74-87-3	Methyl chloride	0.00042 U	0.0010	0.00042	mg/l	
75-09-2	Methylene chloride	0.0016 U	0.0050	0.0016	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
100-42-5	Styrene	0.00040 U	0.0010	0.00040	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00033 U	0.0010	0.00033	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.00046 U	0.0010	0.00046	mg/l	
79-00-5	1,1,2-Trichloroethane	0.00047 U	0.0010	0.00047	mg/l	
127-18-4	Tetrachloroethylene	0.00037 U	0.0010	0.00037	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
79-01-6	Trichloroethylene	0.00041 U	0.0010	0.00041	mg/l	

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-T2-181017		
Lab Sample ID:	TD29032-17	**Date Sampled:**	10/17/18
Matrix:	AQ - Field Blank Water	**Date Received:**	10/18/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
75-01-4	Vinyl chloride	0.00033 U	0.0010	0.00033	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	117%		68-124%
2037-26-5	Toluene-D8	113%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

Sommers, Elessa (Houston)

From: Ynfante, John/HOU <John.Ynfante@jacobs.com>
Sent: Tuesday, November 20, 2018 1:08 PM
To: Sommers, Elessa (Houston)
Subject: RE: SGS North America Inc., Tx Data for DOWMIM (Jacobs), sampled on 10/17/2018. Job number : TD29032

Elessa,

It was just brought to my attention that there is a sample ID error in this Charlie Burch SDG TD29032: Sample "MW-CB-2BS-181017" should be "MW-CB-1BS-181017". The ID on the chain does look like 2BS so I think this is on us but it was definitely supposed to be 1BS for that sample. So can you please make that ID change and reissue the PDF and EDD? I apologize for the inconvenience. You can include this e-mail in the report as documentation. Thanks!

- John

-----Original Message-----
From: Sommers, Elessa (Houston) <Elessa.Sommers@sgs.com>
Sent: Friday, November 02, 2018 1:40 PM
To: Ynfante, John/HOU <john.ynfante@jacobs.com>
Cc: DowTXDM@jabobs.com
Subject: [EXTERNAL] EDD: SGS North America Inc., Tx Data for DOWMIM (Jacobs), sampled on 10/17/2018. Job number : TD29032

Elessa Sommers
Environment, Health and Safety
Project Manager, Houston
SGS North America Inc. - Houston
10165 Harwin Dr, Suite 150
Houston, TX 77036

Phone: +1 713 271 4700 ext 4111
Mobile: +1 346 240 5447
Fax: +1 713 271 4770
email: Elessa.Sommers@sgs.com

-----Original Message-----
From: EHS.Dayton.edd@sgs.com <EHS.Dayton.edd@sgs.com>
Sent: Friday, November 02, 2018 12:28 PM
To: Sommers, Elessa (Houston) <Elessa.Sommers@sgs.com>
Subject: SGS North America Inc., Tx Data for DOWMIM (Jacobs), sampled on 10/17/2018. Job number : TD29032

"The following attachment(s) contain your SGS North America Inc. data for job TD29032 in computer readable format(s). If you should have any questions or comments, please forward this email with your comments to

EHS.Dayton.edd@sgs.com. "SGS North America Inc., Tx Data for DOWMIM (Jacobs), sampled on 10/17/2018. Job number : TD29032""

--

Server:AGC-EDD-VM20/Inst:20.1/Rev:11/1/2018 2:32:50 PM/Format:EQUISDOWXL2 Information in this email and any attachments is confidential and intended solely for the use of the individual(s) to whom it is addressed or otherwise directed. Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of the Company. Finally, the recipient should check this email and any attachments for the presence of viruses. The Company accepts no liability for any damage caused by any virus transmitted by this email. All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.sgs.com_en_Terms-2Dand-2DConditions.aspx&d=DwIFAw&c=OgZOSER8c1RLeytEexU279Q2qk0jVwkrOdYe5iSi-kk&r=c_H9jRbFvCvPIFt315zVyz3ScNhoiflxa7-3z7hz_rQ&m=5JX8MstZBzCq_axxaxhEltmyBh_3Utq9i-T3CW3XLil&s=SneqexCfC6mFwWIWF6FIx9tWE0TsSviXujxT_0486LM&e=

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Sommers, Elessa (Houston)

From: Ynfante, John/HOU <John.Ynfante@jacobs.com>
Sent: Monday, October 22, 2018 2:37 PM
To: Sommers, Elessa (Houston)
Subject: RE: TD29032 Charlie Burch COC not requesting analysis on some samples

Elessa,

OBS-2-181017 and OBS-1-181017 are for 1,2-dichloroethane only
TB-01-181017 and ERB-T2-181017 are for TCL list VOCs

From: Sommers, Elessa (Houston) <Elessa.Sommers@sgs.com>
Sent: Monday, October 22, 2018 1:44 PM
To: Ynfante, John/HOU <john.ynfante@jacobs.com>
Subject: [EXTERNAL] TD29032 Charlie Burch COC not requesting analysis on some samples

John,

We received VOA vials for the following samples but the COC does not indicate which list to use for analysis:

OBS-2-181017
OBS-1-181017
TB-01-181017
ERB-T2-181017

Please let me know which analysis to log these in for.

Thanks.

Elessa Sommers
Environment, Health and Safety
Project Manager, Houston

SGS North America Inc. – Houston
10165 Harwin Dr, Suite 150
Houston, TX 77036

Phone: +1 713 271 4700 ext 4111
Mobile: +1 346 240 5447
Fax: +1 713 271 4770
email: Elessa.Sommers@sgs.com

CONTINUOUS SERVICE IMPROVEMENT!

Our goal is to continuously improve our service to you. Please share your ideas about how we can serve you better at EHS.US.CustomerCare@sgs.com. Your feedback is appreciated!

SGS

TD29032: Chain of Custody
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TD29032: Chain of Custody
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CHAIN OF CUSTODY

PAGE 1 OF 2

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/chsusa

FED-EX Tracking #:
Bottle Order Control #:
SGS Accutest Quote #:
SGS Accutest Job #: TD29032

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): David Ronan Phone #: 210-240-0125

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 701411.04.GW
Client Purchase Order #:
Project Manager: Joshua McFerlain

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2,4-Dimethylphenol by 8270	LAB USE ONLY
1	MW-CB-7B-181017	10/17/18	0930	DR	GW	3	3												X				
2	MW-CB-4-181017	10/17/18	0940	DR	GW	3	3												X				
3	MW-CB-12BS-181017	10/17/18	1050	DR	GW	3	3												X				
4	RW-CB-2-181017	10/17/18	1052	DR	GW	3	3												X				
5	RW-CB-4-181017	10/17/18	1153	DR	GW	3	3												X				
6	MW-CB-1B-181017	10/17/18	1155	DR	GW	3	3												X				
7	MW-CB-1A-181017	10/17/18	1354	DR	GW	3	3												X				
8	OW-2-181017	10/17/18	1415	DR	GW	3	3												X				
9	MW-CB-2A-181017	10/17/18	1455	DR	GW	3	3												X				
10	MW-CB-2B-181017	10/17/18	1545	DR	GW	3	3												X				
11	OB35-2-181017	10/17/18	1550	DR	GW	3	3												X				
12	OB35-1-181017	10/17/18	1621	DR	GW	3	3												X				

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions: DOWMIM29283

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 10/18/18	Received By:	Date Time: 1057	Relinquished By: 2	Date Time: 10.18.18 1325	Received By:	Date Time: 10/18/18
Relinquished by Sampler: 3	Date Time: 757	Received By: 3	Date Time:	Relinquished By: 4	Date Time:	Received By: 4	Date Time:
Relinquished by: 5	Date Time:	Received By: 5	Date Time:	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable	On Ice: Cooler Temp. 1.0

SGS

CHAIN OF CUSTODY

PAGE 2 OF 2

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

FED-EX Tracking #

Bottle Order Control #

SGS Accutest Quote #

SGS Accutest Job # TD29032

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): David Rowan Phone #: 210.240.0923

Project Information

Project Name: Charlie Burch - Annual Sampling 13 Acre Tract
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Joshua McFarlin

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MeOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2,4-Dimethylphenol by 8270	LAB USE ONLY
13	EAB-MW-3-181017	10/17/18	1702	DR	GW	3	3														X		
14	Dup-02-181017	10/17/18	NG	DR	GW	3	3												X				
15	Dup-03-181017	10/17/18	NG	DR	GW	3	3														X		
16	TB-01-181017	10/17/18	0730	DR	LIQ	2	2																
17	ERB-T2-181017	10/17/18	0810	DR	FB	3	3																

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1		10/18/18		7:57		10-18-18 12:25		10/18/18
2								
3	Relinquished by Sampler:	Date Time: 757	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
4								
5	Relinquished by:	Date Time:	Received By:	Date Time:	Custody Seal #	[ ] Intact [ ] Not Intact	Preserved where applicable	On Ice / Cooler Temp. 1.0

SGS

COOLER TEMP FORM

SGS JOB# TD29032

Delivered by (circle one): FedEx/UPS ~~ATGC Driver~~ Client

Date: 10-18-18

Client: JACOBS

Cooler Number:

Thermometer ID: IR3 CF, °C 0.0 Corrected Temp, °C 1.0

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

TD29032: Chain of Custody
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SGS Sample Receipt Summary

Job Number: TD29032 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1/1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD29032 **Date / Time Received:** 10/18/2018 12:25:00 PM **Initials:** DS

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29032-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-6	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-7	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-7	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-7	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-8	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-8	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1

Sample Receipt Log

Job #: TD29032 **Date / Time Received:** 10/18/2018 12:25:00 PM **Initials:** DS

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29032-8	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-9	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-9	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-9	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-10	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-10	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-10	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-11	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-11	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-11	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-12	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-12	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-12	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-13	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-13	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-13	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-14	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-14	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-14	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-15	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-15	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-15	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-16	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1

Sample Receipt Log

Job #: TD29032 **Date / Time Received:** 10/18/2018 12:25:00 PM **Initials:** DS

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29032-16	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-17	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-17	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1
1	TD29032-17	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1	0	1

Appendix A Laboratory Data Package Cover Page

TD29032 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/2/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/2/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29032**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1876, VR1877, VZ5968**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		X			**2**
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?	X				
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/2/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29032				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	VR1876, VR1877, VZ5968				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?			X			2
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/2/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29032**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1876, VR1877, VZ5968**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5968-MB	Z70226.D	1	10/22/18	FT	n/a	n/a	VZ5968

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-1, TD29032-2, TD29032-3, TD29032-4, TD29032-5, TD29032-6, TD29032-7, TD29032-8, TD29032-9, TD29032-10, TD29032-14

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	114%	68-124%
2037-26-5	Toluene-D8	104%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

Method Blank Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1876-MB	R03478370.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-13, TD29032-15

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

Method Blank Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1876-MB	R03478370.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-13, TD29032-15

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	118%	68-124%
2037-26-5	Toluene-D8	111%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Method Blank Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-MB	R03478399.D	1	10/24/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-11, TD29032-12, TD29032-16, TD29032-17

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

Method Blank Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-MB	R03478399.D	1	10/24/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-11, TD29032-12, TD29032-16, TD29032-17

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	118%	68-124%
2037-26-5	Toluene-D8	112%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Blank Spike Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1876-BS	R03478368.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-13, TD29032-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	103	82	46-129
71-43-2	Benzene	25	19.7	79	68-119
75-27-4	Bromodichloromethane	25	21.6	86	72-118
75-25-2	Bromoform	25	23.6	94	54-123
108-90-7	Chlorobenzene	25	22.0	88	74-120
75-00-3	Chloroethane	25	20.4	82	61-132
67-66-3	Chloroform	25	20.0	80	73-122
75-15-0	Carbon disulfide	25	22.2	89	55-140
56-23-5	Carbon tetrachloride	25	23.5	94	68-133
75-34-3	1,1-Dichloroethane	25	21.1	84	72-121
75-35-4	1,1-Dichloroethylene	25	23.2	93	67-140
107-06-2	1,2-Dichloroethane	25	20.6	82	68-121
78-87-5	1,2-Dichloropropane	25	23.2	93	72-116
124-48-1	Dibromochloromethane	25	25.6	102	68-119
156-59-2	cis-1,2-Dichloroethylene	25	19.5	78	72-117
10061-01-5	cis-1,3-Dichloropropene	25	20.3	81	71-118
156-60-5	trans-1,2-Dichloroethylene	25	21.4	86	68-124
10061-02-6	trans-1,3-Dichloropropene	25	23.8	95	72-127
100-41-4	Ethylbenzene	25	23.2	93	71-117
591-78-6	2-Hexanone	125	118	94	49-124
108-10-1	4-Methyl-2-pentanone	125	111	89	54-122
74-83-9	Methyl bromide	25	30.5	122	53-138
74-87-3	Methyl chloride	25	19.8	79	50-145
75-09-2	Methylene chloride	25	20.8	83	60-125
78-93-3	Methyl ethyl ketone	125	107	86	51-129
100-42-5	Styrene	25	22.7	91	74-119
71-55-6	1,1,1-Trichloroethane	25	23.0	92	72-129
79-34-5	1,1,2,2-Tetrachloroethane	25	25.8	103	62-121
79-00-5	1,1,2-Trichloroethane	25	23.5	94	70-119
127-18-4	Tetrachloroethylene	25	23.7	95	72-132
108-88-3	Toluene	25	22.1	88	73-119
79-01-6	Trichloroethylene	25	20.4	82	73-121
75-01-4	Vinyl chloride	25	20.1	80	54-126
1330-20-7	Xylene (total)	75	69.0	92	74-119

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1876-BS	R03478368.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-13, TD29032-15

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	114%	68-124%
2037-26-5	Toluene-D8	112%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5968-BS	Z70223.D	1	10/22/18	FT	n/a	n/a	VZ5968
VZ5968-BSD	Z70224.D	1	10/22/18	FT	n/a	n/a	VZ5968

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-1, TD29032-2, TD29032-3, TD29032-4, TD29032-5, TD29032-6, TD29032-7, TD29032-8, TD29032-9, TD29032-10, TD29032-14

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	25	27.6	110	28.2	113	2	68-121/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	109%	72-122%
17060-07-0	1,2-Dichloroethane-D4	116%	112%	68-124%
2037-26-5	Toluene-D8	102%	103%	80-119%
460-00-4	4-Bromofluorobenzene	102%	103%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-BS	R03478396.D	1	10/23/18	FI	n/a	n/a	VR1877
VR1877-BSD [a]	R03478397.D	1	10/23/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-11, TD29032-12, TD29032-16, TD29032-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	125	103	82	99.6	80	3	46-129/30
71-43-2	Benzene	25	20.2	81	20.8	83	3	68-119/30
75-27-4	Bromodichloromethane	25	20.5	82	21.1	84	3	72-118/30
75-25-2	Bromoform	25	19.1	76	19.9	80	4	54-123/30
108-90-7	Chlorobenzene	25	21.9	88	23.0	92	5	74-120/30
75-00-3	Chloroethane	25	22.9	92	19.0	76	19	61-132/30
67-66-3	Chloroform	25	19.9	80	20.8	83	4	73-122/30
75-15-0	Carbon disulfide	25	22.0	88	21.6	86	2	55-140/30
56-23-5	Carbon tetrachloride	25	20.3	81	20.4	82	0	68-133/30
75-34-3	1,1-Dichloroethane	25	21.7	87	22.9	92	5	72-121/30
75-35-4	1,1-Dichloroethylene	25	23.8	95	23.7	95	0	67-140/30
107-06-2	1,2-Dichloroethane	25	20.8	83	21.5	86	3	68-121/30
78-87-5	1,2-Dichloropropane	25	23.8	95	24.7	99	4	72-116/30
124-48-1	Dibromochloromethane	25	21.5	86	22.7	91	5	68-119/30
156-59-2	cis-1,2-Dichloroethylene	25	19.9	80	20.3	81	2	72-117/30
10061-01-5	cis-1,3-Dichloropropene	25	18.6	74	19.6	78	5	71-118/30
156-60-5	trans-1,2-Dichloroethylene	25	21.2	85	22.5	90	6	68-124/30
10061-02-6	trans-1,3-Dichloropropene	25	19.8	79	21.2	85	7	72-127/30
100-41-4	Ethylbenzene	25	23.3	93	24.4	98	5	71-117/30
591-78-6	2-Hexanone	125	117	94	121	97	3	49-124/30
108-10-1	4-Methyl-2-pentanone	125	112	90	115	92	3	54-122/30
74-83-9	Methyl bromide	25	34.5	138	31.7	127	8	53-138/30
74-87-3	Methyl chloride	25	20.6	82	18.0	72	13	50-145/30
75-09-2	Methylene chloride	25	21.3	85	21.3	85	0	60-125/30
78-93-3	Methyl ethyl ketone	125	107	86	110	88	3	51-129/30
100-42-5	Styrene	25	22.4	90	23.7	95	6	74-119/30
71-55-6	1,1,1-Trichloroethane	25	22.5	90	23.9	96	6	72-129/30
79-34-5	1,1,2,2-Tetrachloroethane	25	24.3	97	25.3	101	4	62-121/30
79-00-5	1,1,2-Trichloroethane	25	22.2	89	23.6	94	6	70-119/30
127-18-4	Tetrachloroethylene	25	25.9	104	23.5	94	10	72-132/30
108-88-3	Toluene	25	22.3	89	23.0	92	3	73-119/30
79-01-6	Trichloroethylene	25	21.3	85	21.5	86	1	73-121/30
75-01-4	Vinyl chloride	25	20.4	82	17.7	71	14	54-126/30
1330-20-7	Xylene (total)	75	69.9	93	72.8	97	4	74-119/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-BS	R03478396.D	1	10/23/18	FI	n/a	n/a	VR1877
VR1877-BSD [a]	R03478397.D	1	10/23/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-11, TD29032-12, TD29032-16, TD29032-17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	115%	115%	68-124%
2037-26-5	Toluene-D8	111%	112%	80-119%
460-00-4	4-Bromofluorobenzene	104%	104%	72-126%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29138-12MS	R03478374.D	1	10/23/18	FI	n/a	n/a	VR1876
TD29138-12MSD	R03478375.D	1	10/23/18	FI	n/a	n/a	VR1876
TD29138-12	R03478373.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-13, TD29032-15

CAS No.	Compound	TD29138-12 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	U	125	96.0	77	125	101	81	5	46-129/25
71-43-2	Benzene	1.0	U	25	19.3	77	25	21.0	84	8	68-119/12
75-27-4	Bromodichloromethane	1.0	U	25	21.6	86	25	23.2	93	7	72-118/16
75-25-2	Bromoform	1.0	U	25	22.6	90	25	24.4	98	8	54-123/17
108-90-7	Chlorobenzene	1.0	U	25	21.5	86	25	22.8	91	6	74-120/12
75-00-3	Chloroethane	1.0	U	25	19.0	76	25	19.5	78	3	61-132/16
67-66-3	Chloroform	1.0	U	25	20.1	80	25	21.4	86	6	73-122/13
75-15-0	Carbon disulfide	5.0	U	25	21.4	86	25	23.2	93	8	55-140/24
56-23-5	Carbon tetrachloride	1.0	U	25	23.1	92	25	26.5	106	14	68-133/20
75-34-3	1,1-Dichloroethane	1.0	U	25	20.5	82	25	22.1	88	8	72-121/14
75-35-4	1,1-Dichloroethylene	1.0	U	25	22.4	90	25	24.7	99	10	67-140/18
107-06-2	1,2-Dichloroethane	26.1		25	46.1	80	25	46.6	82	1	68-121/12
78-87-5	1,2-Dichloropropane	1.0	U	25	22.6	90	25	24.7	99	9	72-116/12
124-48-1	Dibromochloromethane	1.0	U	25	24.6	98	25	26.3	105	7	68-119/15
156-59-2	cis-1,2-Dichloroethylene	1.0	U	25	19.7	79	25	20.8	83	5	72-117/13
10061-01-5	cis-1,3-Dichloropropene	1.0	U	25	19.1	76	25	21.4	86	11	71-118/18
156-60-5	trans-1,2-Dichloroethylene	1.0	U	25	21.2	85	25	22.3	89	5	68-124/15
10061-02-6	trans-1,3-Dichloropropene	1.0	U	25	22.3	89	25	25.1	100	12	72-127/17
100-41-4	Ethylbenzene	1.0	U	25	22.7	91	25	23.9	96	5	71-117/12
591-78-6	2-Hexanone	10	U	125	115	92	125	119	95	3	49-124/21
108-10-1	4-Methyl-2-pentanone	10	U	125	108	86	125	115	92	6	54-122/20
74-83-9	Methyl bromide	1.0	U	25	28.4	114	25	31.1	124	9	53-138/16
74-87-3	Methyl chloride	1.0	U	25	17.1	68	25	17.0	68	1	50-145/17
75-09-2	Methylene chloride	5.0	U	25	20.1	80	25	21.9	88	9	60-125/16
78-93-3	Methyl ethyl ketone	10	U	125	104	83	125	109	87	5	51-129/22
100-42-5	Styrene	1.0	U	25	22.3	89	25	23.4	94	5	74-119/19
71-55-6	1,1,1-Trichloroethane	1.0	U	25	21.9	88	25	25.1	100	14	72-129/14
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	25	25.3	101	25	26.2	105	3	62-121/17
79-00-5	1,1,2-Trichloroethane	1.0	U	25	22.9	92	25	24.3	97	6	70-119/13
127-18-4	Tetrachloroethylene	1.0	U	25	21.7	87	25	22.4	90	3	72-132/14
108-88-3	Toluene	1.0	U	25	21.5	86	25	22.7	91	5	73-119/13
79-01-6	Trichloroethylene	1.0	U	25	19.7	79	25	21.4	86	8	73-121/13
75-01-4	Vinyl chloride	1.0	U	25	17.4	70	25	17.1	68	2	54-126/17
1330-20-7	Xylene (total)	1.0	U	75	67.4	90	75	71.9	96	6	74-119/13

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29032
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29138-12MS	R03478374.D	1	10/23/18	FI	n/a	n/a	VR1876
TD29138-12MSD	R03478375.D	1	10/23/18	FI	n/a	n/a	VR1876
TD29138-12	R03478373.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29032-13, TD29032-15

CAS No.	Surrogate Recoveries	MS	MSD	TD29138-12	Limits
1868-53-7	Dibromofluoromethane	105%	105%	107%	72-122%
17060-07-0	1,2-Dichloroethane-D4	119%	117%	120%	68-124%
2037-26-5	Toluene-D8	112%	111%	112%	80-119%
460-00-4	4-Bromofluorobenzene	104%	106%	104%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch Annual Sampling / 701411.01.GW

SGS Job Number: TD29138

Sampling Date: 10/18/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: 45

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

November 7, 2018

Jacobs

5995 Rogerdale Rd.

Houston, TX 77072

ATTN: Josh McFarlain

RE: Accutest job TD29138 Reissue

Dear Mr. McFarlain:

The report for TD29138 has been updated to to correct the sample ID for TD29138-9 per an email received from John Ynfante.

I apologize for any inconvenience. Please feel free to contact me if I can be of further assistance.

Sincerely,

Elessa Sommers

Elessa Sommers

Project Manager

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Sample Summary

Dow Chemical Company

Job No: TD29138

DOWMIM (Jacobs)
Project No: Charlie Burch Annual Sampling / 701411.01.GW

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29138-1	10/18/18	09:07		10/19/18	AQ	Ground Water	MW-CB-11AS-181018
TD29138-2	10/18/18	10:15		10/19/18	AQ	Ground Water	MW-CB-41D-181018
TD29138-3	10/18/18	10:23		10/19/18	AQ	Ground Water	MW-CB-12AD-181018
TD29138-4	10/18/18	10:51		10/19/18	AQ	Ground Water	MW-CB-41S-181018
TD29138-5	10/18/18	11:10		10/19/18	AQ	Ground Water	MW-CB-12AS-181018
TD29138-6	10/18/18	13:20		10/19/18	AQ	Ground Water	MW-CB-40-181018
TD29138-7	10/18/18	13:22		10/19/18	AQ	Ground Water	MW-CB-24AS-181018
TD29138-8	10/18/18	14:25		10/19/18	AQ	Ground Water	MW-CB-39-181018
TD29138-9	10/18/18	14:34		10/19/18	AQ	Ground Water	TRW-CB-1-181018
TD29138-10	10/18/18	15:20		10/19/18	AQ	Ground Water	MW-CB-42-181018
TD29138-11	10/18/18	16:00		10/19/18	AQ	Ground Water	MW-CB-14AS-181018
TD29138-12	10/18/18	16:50		10/19/18	AQ	Ground Water	RDP-3-181018
TD29138-12D	10/18/18	16:50		10/19/18	AQ	Water Dup/MSD	RDP-3-181018 MSD

Sample Summary
(continued)

Dow Chemical Company

Job No: TD29138

DOWMIM (Jacobs)
Project No: Charlie Burch Annual Sampling / 701411.01.GW

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29138-12S	10/18/18	16:50		10/19/18	AQ	Water Matrix Spike	RDP-3-181018 MS
TD29138-13	10/18/18	00:00		10/19/18	AQ	Ground Water	DUP-04-181018
TD29138-14	10/18/18	00:00		10/19/18	AQ	Ground Water	DUP-05-181018
TD29138-15	10/18/18	00:00		10/19/18	AQ	Ground Water	DUP-06-181018
TD29138-16	10/18/18	07:30		10/19/18	AQ	Trip Blank Water	TB-01-181018

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29138

Site: DOWMIM (Jacobs) **Report Date** 11/2/2018 7:20:42 PM

15 Samples and 1 Trip Blank were collected on 10/18/2018 and received intact at SGS North America Inc (SGS) on 10/19/2018 and properly preserved in 1 cooler at 4.1 Deg C. The samples received an Accutest job number of TD29138. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

The chain-of-custody listed Matrix Spike and Matirx Spike Duplicate analysis for sample TD29138-6, but insufficient vials were receivd for MS/MSD analysis on this sample.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1876

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29138-12MS, TD29138-12MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VR1877

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

Matrix: AQ **Batch ID:** VZ5968

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29138
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/18/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29138-1	**MW-CB-11AS-181018**					
1,2-Dichloroethane		0.0019	0.0010	0.00040	mg/l	SW846 8260C
TD29138-2	**MW-CB-41D-181018**					
No hits reported in this sample.						
TD29138-3	**MW-CB-12AD-181018**					
1,2-Dichloroethane		0.0221	0.0010	0.00040	mg/l	SW846 8260C
TD29138-4	**MW-CB-41S-181018**					
1,2-Dichloroethane		0.00066 J	0.0010	0.00040	mg/l	SW846 8260C
TD29138-5	**MW-CB-12AS-181018**					
1,2-Dichloroethane		0.0101	0.0010	0.00040	mg/l	SW846 8260C
TD29138-6	**MW-CB-40-181018**					
1,2-Dichloroethane		0.0292	0.0010	0.00040	mg/l	SW846 8260C
TD29138-7	**MW-CB-24AS-181018**					
No hits reported in this sample.						
TD29138-8	**MW-CB-39-181018**					
1,2-Dichloroethane		0.00085 J	0.0010	0.00040	mg/l	SW846 8260C
TD29138-9	**TRW-CB-1-181018**					
1,2-Dichloroethane		0.0175	0.0010	0.00040	mg/l	SW846 8260C
TD29138-10	**MW-CB-42-181018**					
No hits reported in this sample.						
TD29138-11	**MW-CB-14AS-181018**					
1,2-Dichloroethane		0.0039	0.0010	0.00040	mg/l	SW846 8260C

Summary of Hits

Job Number: TD29138
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/18/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29138-12	**RDP-3-181018**					
1,2-Dichloroethane		0.0261	0.0010	0.00040	mg/l	SW846 8260C
TD29138-13	**DUP-04-181018**					
1,2-Dichloroethane		0.0077	0.0010	0.00040	mg/l	SW846 8260C
TD29138-14	**DUP-05-181018**					
1,2-Dichloroethane		0.0210	0.0010	0.00040	mg/l	SW846 8260C
TD29138-15	**DUP-06-181018**					
1,2-Dichloroethane		0.0255	0.0010	0.00040	mg/l	SW846 8260C
TD29138-16	**TB-01-181018**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-CB-11AS-181018		
Lab Sample ID:	TD29138-1	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70238.D	1	10/23/18 02:27	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0019	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	107%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-41D-181018		
Lab Sample ID:	TD29138-2	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70239.D	1	10/23/18 02:52	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-12AD-181018		
Lab Sample ID:	TD29138-3	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70240.D	1	10/23/18 03:16	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0221	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	118%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	108%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-41S-181018		
Lab Sample ID:	TD29138-4	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70241.D	1	10/23/18 03:41	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00066	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	106%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-12AS-181018		
Lab Sample ID:	TD29138-5	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70242.D	1	10/23/18 04:05	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0101	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	115%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	108%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-40-181018		
Lab Sample ID:	TD29138-6	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70243.D	1	10/23/18 04:30	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0292	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-122%
17060-07-0	1,2-Dichloroethane-D4	118%		68-124%
2037-26-5	Toluene-D8	106%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-24AS-181018		
Lab Sample ID:	TD29138-7	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70244.D	1	10/23/18 04:54	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	108%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-39-181018		
Lab Sample ID:	TD29138-8	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70245.D	1	10/23/18 05:18	FT	n/a	n/a	VZ5968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00085	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	117%		68-124%
2037-26-5	Toluene-D8	105%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRW-CB-1-181018		
Lab Sample ID:	TD29138-9	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478405.D	1	10/24/18 03:15	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0175	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	122%		68-124%
2037-26-5	Toluene-D8	111%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-42-181018		
Lab Sample ID:	TD29138-10	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478406.D	1	10/24/18 03:41	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	114%		68-124%
2037-26-5	Toluene-D8	114%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-14AS-181018		
Lab Sample ID:	TD29138-11	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478407.D	1	10/24/18 04:08	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0039	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	121%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RDP-3-181018		
Lab Sample ID:	TD29138-12	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478373.D	1	10/23/18 13:05	FI	n/a	n/a	VR1876
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0261	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	120%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-04-181018		
Lab Sample ID:	TD29138-13	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478408.D	1	10/24/18 04:34	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0077	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	120%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-05-181018		
Lab Sample ID:	TD29138-14	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478409.D	1	10/24/18 05:00	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0210	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	121%		68-124%
2037-26-5	Toluene-D8	111%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-06-181018		
Lab Sample ID:	TD29138-15	**Date Sampled:**	10/18/18
Matrix:	AQ - Ground Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478410.D	1	10/24/18 05:27	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0255	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	120%		68-124%
2037-26-5	Toluene-D8	111%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-181018		
Lab Sample ID:	TD29138-16	**Date Sampled:**	10/18/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/19/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478401.D	1	10/24/18 01:28	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	120%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

CHAIN OF CUSTODY

PAGE 1 OF 2

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD29138

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): David Rohan Phone #: 210-241-0923

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 701411.01.GW
Client Purchase Order #:
Project Manager: Josh McFerrin

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2,4-Dimethylphenol by 8270	LAB USE ONLY
1	MW-CB-11AS-181018	10/18/18	0907	DR	GW	3	3												X				
2	MW-CB-41D-181018	10/18/18	1015	FE	GW	3	3												X				
3	MW-CB-12AD-181018	10/18/18	1023	DR	GW	3	3												X				
4	MW-CB-41S-181018	10/18/18	1051	FE	GW	3	3												X				
5	MW-CB-12AS-181018	10/18/18	1110	DR	GW	3	3												X				
6	MW-CB-40-181018 MS/MSD	10/18/18	1320	FE	GW	9	9												X				
7	MW-CB-24AS-181018	10/18/18	1322	DR	GW	3	3												X				
8	MW-CB-39-181018	10/18/18	1425	FE	GW	3	3												X				
9	MW-CB-1-181018	10/18/18	1434	DR	GW	3	3												X				
10	MW-CB-42-181018	10/18/18	1520	FE	GW	3	3												X				
11	MW-CB-14AS-181018	10/18/18	1600	DR	GW	3	3												X				
12	RDP-3-181018 MS/MSD	10/18/18	1650	FE	GW	9	9												X				

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Labfink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283
RDP-3-181018-MS/MSD
MW-CB-40-181018-MS/MSD

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1		10/19/18 0750		10/19/18	7:50	10/19/18 13:35	2	10/19/18
3			3		4		4	
5			5		Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp.

CHAIN OF CUSTODY

PAGE 2 OF 2

SGS

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD29138

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): David Ruan Phone #: 210-240-4923

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 20141.01.GW
Client Purchase Order #:
Project Manager: Josh McFarlain

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2-4-Dimethylphenol by 8270	LAB USE ONLY
13	DUP-01-181018	10/18/18	NG	N/A	GW	3	3												X				
14	DUP-05-181018	10/18/18	NG	N/A	GW	3	3												X				
15	DUP-06-181018	10/18/18	NG	N/A	GW	3	3												X				
16	TB-01-181018	10/16/18	0730	DR	LIQ	2	2																

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1		10/18/18 0750		7:50				
2						10-19-18 13:35		10/19/18
3	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
4								
5	Relinquished by:	Date Time:	Received By:	Date Time:	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp: 4.1

SGS

COOLER TEMP FORM

SGS JOB# TD29138

Delivered by (circle one): FedEx/UPS (ALGC Driver) Client

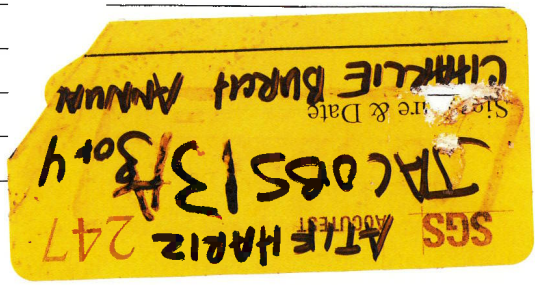
Date: 10-19-18

Client: JACOBS

Cooler Number:

Thermometer ID: IR-3 CF, °C 0.0 Corrected Temp, °C 4.1

SAMPLES CONTAINED IN COOLER



SM027
Rev. 7

5.1 5

TD29138: Chain of Custody
Page 3 of 7

SGS Sample Receipt Summary

Job Number: TD29138 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (4.1/4.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☐		☐	☑		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☐		☑
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments -6 MW-CB 40 18108 MS/MSD was not received for MS/MSD. Only 3 vials were received.

Sample Receipt Log

Job #: TD29138 **Date / Time Received:** 10/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29138-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-6	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1

Sample Receipt Log

Job #: TD29138 **Date / Time Received:** 10/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29138-12	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-7	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-7	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-7	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-8	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-8	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-8	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-9	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-9	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-9	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-10	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-10	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-10	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-11	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-11	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-11	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-12	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-13	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-13	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-13	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-14	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1

Sample Receipt Log

Job #: TD29138 **Date / Time Received:** 10/19/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29138-14	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-14	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-15	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-15	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-15	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-16	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1
1	TD29138-16	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	4.1	0	4.1

Appendix A Laboratory Data Package Cover Page

TD29138 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ R1 Field chain-of-custody documentation;

□□□ R2 Sample identification cross-reference;

□□□ R3 Test reports (analytical data sheets) for each environmental sample that includes:

- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

□□□ R4 Surrogate recovery data including:

- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

□□□ R5 Test reports/summary forms for blank samples;

□□□ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

□□□ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

□□□ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

□□□ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method

□□□ R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/2/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/2/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29138**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1876, VR1877, VZ5968**

#[1]	A[2]	DESCRIPTION	YES	NO	NA[3]	NR[4]	ER #[5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				**2**
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		X			**2**
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?	X				
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/2/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29138				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	VR1876, VR1877, VZ5968				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/2/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29138**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1876, VR1877, VZ5968**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5968-MB	Z70226.D	1	10/22/18	FT	n/a	n/a	VZ5968

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-1, TD29138-2, TD29138-3, TD29138-4, TD29138-5, TD29138-6, TD29138-7, TD29138-8

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	106%	72-122%
17060-07-0	1,2-Dichloroethane-D4	114%	68-124%
2037-26-5	Toluene-D8	104%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

Method Blank Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1876-MB	R03478370.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-12

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	118%	68-124%
2037-26-5	Toluene-D8	111%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Method Blank Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-MB	R03478399.D	1	10/24/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-9, TD29138-10, TD29138-11, TD29138-13, TD29138-14, TD29138-15, TD29138-16

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	118%	68-124%
2037-26-5	Toluene-D8	112%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Blank Spike Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1876-BS	R03478368.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	20.6	82	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	114%	68-124%
2037-26-5	Toluene-D8	112%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5968-BS	Z70223.D	1	10/22/18	FT	n/a	n/a	VZ5968
VZ5968-BSD	Z70224.D	1	10/22/18	FT	n/a	n/a	VZ5968

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-1, TD29138-2, TD29138-3, TD29138-4, TD29138-5, TD29138-6, TD29138-7, TD29138-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	25	27.6	110	28.2	113	2	68-121/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	109%	72-122%
17060-07-0	1,2-Dichloroethane-D4	116%	112%	68-124%
2037-26-5	Toluene-D8	102%	103%	80-119%
460-00-4	4-Bromofluorobenzene	102%	103%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-BS	R03478396.D	1	10/23/18	FI	n/a	n/a	VR1877
VR1877-BSD [a]	R03478397.D	1	10/23/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-9, TD29138-10, TD29138-11, TD29138-13, TD29138-14, TD29138-15, TD29138-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	25	20.8	83	21.5	86	3	68-121/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	115%	115%	68-124%
2037-26-5	Toluene-D8	111%	112%	80-119%
460-00-4	4-Bromofluorobenzene	104%	104%	72-126%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29138
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29138-12MS	R03478374.D	1	10/23/18	FI	n/a	n/a	VR1876
TD29138-12MSD	R03478375.D	1	10/23/18	FI	n/a	n/a	VR1876
TD29138-12	R03478373.D	1	10/23/18	FI	n/a	n/a	VR1876

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29138-12

CAS No.	Compound	TD29138-12 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	26.1		25	46.1	80	25	46.6	82	1	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD29138-12	Limits
1868-53-7	Dibromofluoromethane	105%	105%	107%	72-122%
17060-07-0	1,2-Dichloroethane-D4	119%	117%	120%	68-124%
2037-26-5	Toluene-D8	112%	111%	112%	80-119%
460-00-4	4-Bromofluorobenzene	104%	106%	104%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch Annual Sampling / 701411.01.GW

SGS Job Number: TD29156

Sampling Date: 10/19/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **43**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

November 7, 2018

Jacobs

5995 Rogerdale Rd.

Houston, TX 77072

ATTN: Josh McFarlain

RE: Accutest job TD29156 Reissue

Dear Mr. McFarlain:

The report for TD29156 has been updated to to correct the sample ID for TD29156-6 per an email received from John Ynfante.

I apologize for any inconvenience. Please feel free to contact me if I can be of further assistance.

Sincerely,

Elessa Sommers

Elessa Sommers

Project Manager

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD29156

DOWMIM (Jacobs)
Project No: Charlie Burch Annual Sampling / 701411.01.GW

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29156-1	10/19/18	08:55		10/20/18	AQ	Ground Water	MW-CB-6B-181019
TD29156-2	10/19/18	09:00		10/20/18	AQ	Ground Water	MW-CB-45-181019
TD29156-3	10/19/18	09:45		10/20/18	AQ	Ground Water	MW-CB-48-181019
TD29156-4	10/19/18	09:52		10/20/18	AQ	Ground Water	RDP-5-181019
TD29156-5	10/19/18	10:25		10/20/18	AQ	Ground Water	MW-CB-47S-181019
TD29156-6	10/19/18	10:50		10/20/18	AQ	Ground Water	MW-CB-6BS-181019
TD29156-7	10/19/18	11:05		10/20/18	AQ	Ground Water	MW-CB-46S-181019
TD29156-8	10/19/18	11:37		10/20/18	AQ	Ground Water	MW-CB-25A-181019
TD29156-9	10/19/18	11:45		10/20/18	AQ	Ground Water	MW-CB-43-181019
TD29156-10	10/19/18	12:50		10/20/18	AQ	Ground Water	MW-CB-44-181019
TD29156-11	10/19/18	13:50		10/20/18	AQ	Ground Water	MW-CB-37S-181019
TD29156-12	10/19/18	14:00		10/20/18	AQ	Ground Water	MW-CB-38-181019
TD29156-13	10/19/18	14:40		10/20/18	AQ	Ground Water	MW-CB-36-181019

Sample Summary
(continued)

Dow Chemical Company

Job No: TD29156

DOWMIM (Jacobs)
Project No: Charlie Burch Annual Sampling / 701411.01.GW

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
TD29156-14	10/19/18	14:45		10/20/18	AQ	Ground Water	MW-CB-33A-181019
TD29156-15	10/19/18	15:55		10/20/18	AQ	Ground Water	MW-CB-28A-181019
TD29156-16	10/19/18	07:30		10/20/18	AQ	Trip Blank Water	TB-01-181019

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29156

Site: DOWMIM (Jacobs) **Report Date** 11/2/2018 7:34:51 PM

15 Samples and 1 Trip Blank were collected on 10/19/2018 and received intact at SGS North America Inc (SGS) on 10/20/2018 and properly preserved in 1 cooler at 1.8 Deg C. The samples received an Accutest job number of TD29156. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1877

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

Matrix: AQ **Batch ID:** VZ5972

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29087-2MS, TD29087-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29156
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/19/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29156-1	**MW-CB-6B-181019**					
No hits reported in this sample.						
TD29156-2	**MW-CB-45-181019**					
1,2-Dichloroethane		0.00051 J	0.0010	0.00040	mg/l	SW846 8260C
TD29156-3	**MW-CB-48-181019**					
No hits reported in this sample.						
TD29156-4	**RDP-5-181019**					
1,2-Dichloroethane		0.0093	0.0010	0.00040	mg/l	SW846 8260C
TD29156-5	**MW-CB-47S-181019**					
No hits reported in this sample.						
TD29156-6	**MW-CB-6BS-181019**					
No hits reported in this sample.						
TD29156-7	**MW-CB-46S-181019**					
No hits reported in this sample.						
TD29156-8	**MW-CB-25A-181019**					
1,2-Dichloroethane		0.0051	0.0010	0.00040	mg/l	SW846 8260C
TD29156-9	**MW-CB-43-181019**					
No hits reported in this sample.						
TD29156-10	**MW-CB-44-181019**					
No hits reported in this sample.						
TD29156-11	**MW-CB-37S-181019**					
No hits reported in this sample.						

Summary of Hits

Job Number: TD29156
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/19/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method

TD29156-12 **MW-CB-38-181019**

No hits reported in this sample.

TD29156-13 **MW-CB-36-181019**

No hits reported in this sample.

TD29156-14 **MW-CB-33A-181019**

No hits reported in this sample.

TD29156-15 **MW-CB-28A-181019**

No hits reported in this sample.

TD29156-16 **TB-01-181019**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-CB-6B-181019		
Lab Sample ID:	TD29156-1	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478411.D	1	10/24/18 05:53	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	118%		68-124%
2037-26-5	Toluene-D8	113%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-45-181019		
Lab Sample ID:	TD29156-2	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478412.D	1	10/24/18 06:20	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00051	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	118%		68-124%
2037-26-5	Toluene-D8	113%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-48-181019		
Lab Sample ID:	TD29156-3	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478413.D	1	10/24/18 06:47	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	119%		68-124%
2037-26-5	Toluene-D8	111%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RDP-5-181019
Lab Sample ID: TD29156-4
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/19/18
Date Received: 10/20/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478414.D	1	10/24/18 07:13	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0093	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	121%		68-124%
2037-26-5	Toluene-D8	110%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-47S-181019		
Lab Sample ID:	TD29156-5	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478415.D	1	10/24/18 07:40	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	116%		68-124%
2037-26-5	Toluene-D8	114%		80-119%
460-00-4	4-Bromofluorobenzene	103%		72-126%

U = Not detected SDL = Sample Detection Limit J = Indicates an estimated value
MQL = Method Quantitation Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-6BS-181019		
Lab Sample ID:	TD29156-6	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478416.D	1	10/24/18 08:06	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	119%		68-124%
2037-26-5	Toluene-D8	113%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-46S-181019		
Lab Sample ID:	TD29156-7	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478417.D	1	10/24/18 08:33	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	119%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-25A-181019		
Lab Sample ID:	TD29156-8	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478418.D	1	10/24/18 08:59	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0051	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	121%		68-124%
2037-26-5	Toluene-D8	112%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-43-181019		
Lab Sample ID:	TD29156-9	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03478419.D	1	10/24/18 09:26	FI	n/a	n/a	VR1877
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	119%		68-124%
2037-26-5	Toluene-D8	114%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-44-181019		
Lab Sample ID:	TD29156-10	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70300.D	1	10/24/18 12:13	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-37S-181019		
Lab Sample ID:	TD29156-11	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70313.D	1	10/24/18 17:30	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-38-181019		
Lab Sample ID:	TD29156-12	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70314.D	1	10/24/18 17:55	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-36-181019		
Lab Sample ID:	TD29156-13	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70315.D	1	10/24/18 18:19	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-33A-181019		
Lab Sample ID:	TD29156-14	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70316.D	1	10/24/18 18:44	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-28A-181019		
Lab Sample ID:	TD29156-15	**Date Sampled:**	10/19/18
Matrix:	AQ - Ground Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70317.D	1	10/24/18 19:08	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-181019		
Lab Sample ID:	TD29156-16	**Date Sampled:**	10/19/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/20/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70301.D	1	10/24/18 12:37	FT	n/a	n/a	VZ5972
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE 1 OF 2

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/chsusa

FED-EX Tracking #
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # TD29156

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): DAVID ROWAN Phone #: 210 240 0923

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 20141101.GW
Client Purchase Order #:
Project Manager: Josh McFarlain

Billing Information (if different from Report to)
Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

SGS Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2-4-Dimethylphenol by 8270	LAB USE ONLY
	MW-CB-6B-181019																						
DR 10/19/18	~~RDP-5-181019~~	10/19/18	0855	FE	GW	3	3												X				1
	MW-CB-45-181019	10/19/18	0900	DR	GW	3	3												X				2
	MW-CB-48-181019	10/19/18	0945	DR	GW	3	3												X				3
DR 10/19/18	~~MW-CB~~ RDP-5-181019	10/19/18	0952	FE	GW	3	3												X				4
	MW-CB-47S-181019	10/19/18	1025	DR	GW	3	3												X				5
	MW-CB-6BS-181019	10/19/18	1050	FE	GW	3	3												X				6
	MW-CB-46S-181019	10/19/18	1105	DR	GW	3	3												X				7
	MW-CB-25A-181019	10/19/18	1137	FE	GW	3	3												X				8
	MW-CB-43-181019	10/19/18	1145	DR	GW	3	3												X				9
	MW-CB-44-181019	10/19/18	1250	DR	GW	3	3												X				10
	MW-CB-37S-181019	10/19/18	1350	FE	GW	3	3												X				11
	MW-CB-38-181019	10/19/18	1400	DR	GW	3	3												X				12

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

FLAGGED BY: SL

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1 [signature]	10/20/18	1 [signature]	10/20/18 1038	2		2	
3	1038	3		4		4	
5		5					

Custody Seal # ☐ Intact ☐ Not intact Preserved where applicable ☐ On Ice ☐ Cooler Temp.

TD29156: Chain of Custody
Page 1 of 7

5.1 5

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TD29156

SGS

CHAIN OF CUSTODY

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

FED-EX Tracking #
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # TD29156

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): DAVID Rowan Phone #: 210 2400923

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 7014N.01.GW
Client Purchase Order #:
Project Manager: Josh McFarlain

Billing Information (if different from Report to)
Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2-4-Dimethylphenol by 8270	LAB USE ONLY
13	MW-CB-36-181019	10/19/18	1440	FE	GW	3	3												X				
14	MW-CB-33A-181019	10/19/18	1445	DR	GW	3	3												X				
15	MW-CB-28A-181019	10/19/18	1555	FE	GW	3	3												X				
16	TB-01-181019	10/19/18	0730	DR	LIQ	2	2																

Turnaround Time (Business days)
- [X] Standard
- [ ] 5 Day RUSH
- [ ] 4 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information
- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions: DOWMIM29283

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1 [signature]	10/20/18	1 [signature]	1330	2		2	
3	1038	3	1038	4		4	
5		5					

Custody Seal # ☐ Intact ☐ Not intact Preserved where applicable ☐ On Ice ☐ Cooler Temp.

TD29156: Chain of Custody
Page 2 of 7

SGS

COOLER TEMP FORM

SGS JOB#_____

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 10/20/18

Client: JACUSS

Cooler Number: 1

Thermometer ID: IR9 CF, °C 0 Corrected Temp, °C 1.8

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/2/19

TD29156: Chain of Custody
Page 3 of 7

SGS Sample Receipt Summary

Job Number: TD29156 **Client:** JACOBS **Project:** CHARLIE BURCH ANNUAL

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.8/1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD29156 **Date / Time Received:** 10/20/2018 10:30:00 AM **Initials:** bg

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29156-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-6	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-7	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-7	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-7	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-8	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-8	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8

Sample Receipt Log

Job #: TD29156 **Date / Time Received:** 10/20/2018 10:30:00 AM **Initials:** bg

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29156-8	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-9	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-9	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-9	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-10	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-10	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-10	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-11	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-11	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-11	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-12	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-12	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-12	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-13	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-13	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-13	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-14	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-14	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-14	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-15	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-15	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-15	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8
1	TD29156-16	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8

Sample Receipt Log

Job #: TD29156 **Date / Time Received:** 10/20/2018 10:30:00 AM **Initials:** bg

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29156-16	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.8	0	1.8

Appendix A Laboratory Data Package Cover Page

TD29156 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/2/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**11/2/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29156**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**VR1877, VZ5972**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/2/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29156				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	VR1877, VZ5972				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/2/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29156**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1877, VZ5972**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29156
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-MB	R03478399.D	1	10/24/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29156-1, TD29156-2, TD29156-3, TD29156-4, TD29156-5, TD29156-6, TD29156-7, TD29156-8, TD29156-9

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	118%	68-124%
2037-26-5	Toluene-D8	112%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Method Blank Summary

Job Number: TD29156
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5972-MB	Z70296.D	1	10/24/18	FT	n/a	n/a	VZ5972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29156-10, TD29156-11, TD29156-12, TD29156-13, TD29156-14, TD29156-15, TD29156-16

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

Blank Spike Summary

Job Number: TD29156
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5972-BS	Z70293.D	1	10/24/18	FT	n/a	n/a	VZ5972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29156-10, TD29156-11, TD29156-12, TD29156-13, TD29156-14, TD29156-15, TD29156-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	22.3	89	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD29156
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1877-BS	R03478396.D	1	10/23/18	FI	n/a	n/a	VR1877
VR1877-BSD [a]	R03478397.D	1	10/23/18	FI	n/a	n/a	VR1877

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29156-1, TD29156-2, TD29156-3, TD29156-4, TD29156-5, TD29156-6, TD29156-7, TD29156-8, TD29156-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	25	20.8	83	21.5	86	3	68-121/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	103%	72-122%
17060-07-0	1,2-Dichloroethane-D4	115%	115%	68-124%
2037-26-5	Toluene-D8	111%	112%	80-119%
460-00-4	4-Bromofluorobenzene	104%	104%	72-126%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29156
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29087-2MS	Z70298.D	1	10/24/18	FT	n/a	n/a	VZ5972
TD29087-2MSD	Z70299.D	1	10/24/18	FT	n/a	n/a	VZ5972
TD29087-2	Z70297.D	1	10/24/18	FT	n/a	n/a	VZ5972

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29156-10, TD29156-11, TD29156-12, TD29156-13, TD29156-14, TD29156-15, TD29156-16

CAS No.	Compound	TD29087-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	18.9		25	41.3	90	25	42.3	94	2	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD29087-2	Limits
1868-53-7	Dibromofluoromethane	97%	97%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	100%	68-124%
2037-26-5	Toluene-D8	100%	99%	101%	80-119%
460-00-4	4-Bromofluorobenzene	100%	101%	104%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

Charlie Burch - Annual

SGS Job Number: TD29324

Sampling Date: 10/24/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com
ATTN: Josh McFarlain

Total number of pages in report: **36**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD29324

DOWMIM (Jacobs)
Project No: Charlie Burch - Annual

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD29324-1	10/24/18	10:08		10/25/18	AQ	Ground Water	MW-CB-26A-181024
TD29324-2	10/24/18	11:55		10/25/18	AQ	Ground Water	EAB-MW-2-181024
TD29324-3	10/24/18	12:40		10/25/18	AQ	Ground Water	MW-CB-13AS-181024
TD29324-4	10/24/18	14:50		10/25/18	AQ	Ground Water	MW-CB-8AD-181024
TD29324-5	10/24/18	17:35		10/25/18	AQ	Ground Water	MW-CB-16AS-181024
TD29324-6	10/24/18	08:00		10/25/18	AQ	Trip Blank Water	TB-01-181024

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No:** TD29324

Site: DOWMIM (Jacobs) **Report Date** 11/5/2018 2:42:19 PM

5 Samples and 1 Trip Blank were collected on 10/24/2018 and received intact at SGS North America Inc (SGS) on 10/25/2018 and properly preserved in 1 cooler at 1.2 Deg C. The samples received an Accutest job number of TD29324. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VR1890

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD29446-11MS, TD29446-11MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery for Methyl bromide is outside control limits. Outside control limits biased high. Analyte not detected in the associated samples.
- Matrix Spike Duplicate Recovery for Methyl bromide is outside control limits. Probable cause due to matrix interference.
- TD29324-2 for Methyl bromide: Associated CCV outside of control limits high, sample was ND.

Matrix: AQ **Batch ID:** VZ5975

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD29212-8MS, TD29212-8MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VZ5983

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD29319-3MS, TD29319-3MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery for Benzene is outside control limits. Outside control limits due to high level in sample relative to spike amount.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD29324
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 10/24/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD29324-1	**MW-CB-26A-181024**					
1,2-Dichloroethane		0.00090 J	0.0010	0.00040	mg/l	SW846 8260C
TD29324-2	**EAB-MW-2-181024**					
1,2-Dichloroethane		0.0056	0.0010	0.00040	mg/l	SW846 8260C
TD29324-3	**MW-CB-13AS-181024**					
1,2-Dichloroethane		0.0015	0.0010	0.00040	mg/l	SW846 8260C
TD29324-4	**MW-CB-8AD-181024**					
1,2-Dichloroethane		0.0030	0.0010	0.00040	mg/l	SW846 8260C
TD29324-5	**MW-CB-16AS-181024**					
No hits reported in this sample.						
TD29324-6	**TB-01-181024**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-CB-26A-181024		
Lab Sample ID:	TD29324-1	**Date Sampled:**	10/24/18
Matrix:	AQ - Ground Water	**Date Received:**	10/25/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70375.D	1	10/26/18 06:13	FT	n/a	n/a	VZ5975
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00090	0.0010	0.00040	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	105%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: EAB-MW-2-181024
Lab Sample ID: TD29324-2
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/24/18
Date Received: 10/25/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70510.D	1	10/30/18 16:19	FI	n/a	n/a	VZ5983
Run #2	R03478602.D	1	11/01/18 10:31	FT	n/a	n/a	VR1890

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
67-64-1	Acetone	0.010 U	0.050	0.010	mg/l	
71-43-2	Benzene	0.00040 U	0.0010	0.00040	mg/l	
75-27-4	Bromodichloromethane	0.00039 U	0.0010	0.00039	mg/l	
75-25-2	Bromoform	0.00036 U	0.0010	0.00036	mg/l	
108-90-7	Chlorobenzene	0.00039 U	0.0010	0.00039	mg/l	
75-00-3	Chloroethane	0.00035 U [a]	0.0010	0.00035	mg/l	
67-66-3	Chloroform	0.00039 U	0.0010	0.00039	mg/l	
75-15-0	Carbon disulfide	0.0010 U	0.0050	0.0010	mg/l	
56-23-5	Carbon tetrachloride	0.00035 U	0.0010	0.00035	mg/l	
75-34-3	1,1-Dichloroethane	0.00043 U	0.0010	0.00043	mg/l	
75-35-4	1,1-Dichloroethylene	0.00036 U	0.0010	0.00036	mg/l	
107-06-2	1,2-Dichloroethane	0.0056	0.0010	0.00040	mg/l	
78-87-5	1,2-Dichloropropane	0.00038 U	0.0010	0.00038	mg/l	
124-48-1	Dibromochloromethane	0.00046 U	0.0010	0.00046	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00042 U	0.0010	0.00042	mg/l	
10061-01-5	cis-1,3-Dichloropropene	0.00039 U	0.0010	0.00039	mg/l	
156-60-5	trans-1,2-Dichloroethylene	0.00042 U [a]	0.0010	0.00042	mg/l	
10061-02-6	trans-1,3-Dichloropropene	0.00037 U	0.0010	0.00037	mg/l	
100-41-4	Ethylbenzene	0.00041 U	0.0010	0.00041	mg/l	
591-78-6	2-Hexanone	0.0032 U	0.010	0.0032	mg/l	
108-10-1	4-Methyl-2-pentanone	0.0029 U	0.010	0.0029	mg/l	
74-83-9	Methyl bromide [b]	0.00030 U [a]	0.0010	0.00030	mg/l	
74-87-3	Methyl chloride	0.00042 U	0.0010	0.00042	mg/l	
75-09-2	Methylene chloride	0.0016 U	0.0050	0.0016	mg/l	
78-93-3	Methyl ethyl ketone	0.0026 U	0.010	0.0026	mg/l	
100-42-5	Styrene	0.00040 U	0.0010	0.00040	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00033 U	0.0010	0.00033	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.00046 U	0.0010	0.00046	mg/l	
79-00-5	1,1,2-Trichloroethane	0.00047 U	0.0010	0.00047	mg/l	
127-18-4	Tetrachloroethylene	0.00037 U	0.0010	0.00037	mg/l	
108-88-3	Toluene	0.00042 U	0.0010	0.00042	mg/l	
79-01-6	Trichloroethylene	0.00041 U	0.0010	0.00041	mg/l	

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EAB-MW-2-181024		
Lab Sample ID:	TD29324-2	**Date Sampled:**	10/24/18
Matrix:	AQ - Ground Water	**Date Received:**	10/25/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

VOA TCL List

CAS No.	Compound	Result	MQL	SDL	Units	Q
75-01-4	Vinyl chloride	0.00033 U	0.0010	0.00033	mg/l	
1330-20-7	Xylene (total)	0.00039 U	0.0010	0.00039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%	108%	72-122%
17060-07-0	1,2-Dichloroethane-D4	93%	115%	68-124%
2037-26-5	Toluene-D8	98%	101%	80-119%
460-00-4	4-Bromofluorobenzene	99%	105%	72-126%

(a) Result is from Run# 2
(b) Associated CCV outside of control limits high, sample was ND.

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-CB-13AS-181024
Lab Sample ID: TD29324-3
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 10/24/18
Date Received: 10/25/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70377.D	1	10/26/18 07:01	FT	n/a	n/a	VZ5975
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0015	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-8AD-181024		
Lab Sample ID:	TD29324-4	**Date Sampled:**	10/24/18
Matrix:	AQ - Ground Water	**Date Received:**	10/25/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70378.D	1	10/26/18 07:25	FT	n/a	n/a	VZ5975
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0030	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-CB-16AS-181024		
Lab Sample ID:	TD29324-5	**Date Sampled:**	10/24/18
Matrix:	AQ - Ground Water	**Date Received:**	10/25/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70379.D	1	10/26/18 07:49	FT	n/a	n/a	VZ5975
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	104%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-181024		
Lab Sample ID:	TD29324-6	**Date Sampled:**	10/24/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/25/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z70380.D	1	10/26/18 08:15	FT	n/a	n/a	VZ5975
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	102%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	106%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

Sommers, Elessa (Houston)

From: Ynfante, John/HOU <John.Ynfante@jacobs.com>
Sent: Monday, October 29, 2018 1:41 PM
To: Sommers, Elessa (Houston)
Subject: correction for Dow Charlie Burch sample
Attachments: GW COC 102418.pdf

Importance: High

Elessa,

It was brought to my attention that Dow Charlie Burch sample EAB-MW-2-181024 on the attached chain should have requested TCL VOCs instead of 1,2-DCA. Can you make that correction on the login?

John Ynfante
Jacobs
Chemist
281-414-1719 mobile
John.Ynfante@jacobs.com
www.jacobs.com

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TD29324: Chain of Custody
Page 1 of 5

CHAIN OF CUSTODY

SGS

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: TD29324

Client / Reporting Information

Company Name: Jacobs (former CH2M Hill)
Street Address: 5995 Rogerdale Rd.
City: Houston State: Texas Zip: 77072
Project Contact: John Ynfante E-mail:
Phone #: 281-414-1719 Fax #:
Sampler(s) Name(s): David Ramon Phone #: 281.240.0923

Project Information

Project Name: Charlie Burch - Annual Sampling
Street:
City: State:
Project #: 701411.01.GW
Client Purchase Order #:
Project Manager: Josh McFarlain

Billing Information (if different from Report to)

Company Name: DOWMIM
Street Address:
City: State: Zip:
Attention:

Requested Analyses

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnAc/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER	1,2-Dichloroethane by 8260	1,2-Dichloroethane & Benzene by 8260	Volatiles by 8260 - Target Compound List	Aniline, o-Cresol, & 2-4-Dimethylphenol by 8270	Matrix Codes	LAB USE ONLY
1	MW-CB-26A-181024	10/24/18	1008	DR	GW	3	X												X					
2	EAB-MW-2-181024	10/24/18	1155	DR	GW	3	X												X					
3	MW-CB-13AS-181024	10/24/18	1240	DR	GW	3	X												X					
4	MW-CB-8AD-181024	10/24/18	1450	DR	GW	3	X												X					
5	MW-CB-16AS-181024	10/24/18	1735	DR	GW	3	X												X					
6	TB-01-181024	10/24/18	0800	DR	LIQ	2	X												X					

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

VERIFIED BY:

Turnaround Time (Business days)

- [X] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [X] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Form: SM021-0

Comments / Special Instructions

DOWMIM29283

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1		10/25/18		10/25/18 0910	2		2	
3	Relinquished by Sampler:	Date Time: 0907	Received By: 3	Date Time:	Relinquished By: 4	Date Time:	Received By: 4	Date Time:
5	Relinquished by:	Date Time:	Received By: 5	Date Time:	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable	On Ice / Cooler Temp 1.2

SGS

COOLER TEMP FORM

SGS JOB# TD29324

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 10-25-18

Client: JACOBS

Cooler Number:

Thermometer ID: IR-9 CF, °C 0.0 Corrected Temp, °C 1.2

SAMPLES CONTAINED IN COOLER

SGS ACCUTEST ATIF HARIZ 245

JACOBS 2 of 4

Signature & Date

CHARLIE BURCH ANNUAL

SM027
Rev. 7
1/2/19

TD29324: Chain of Custody
Page 3 of 5

SGS Sample Receipt Summary

Job Number: TD29324 **Client:** JACOBS **Project:** CHARLUE BURCH

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.2/1.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD29324 **Date / Time Received:** 10/25/2018 9:04:00 AM **Initials:** DS

Client: JACOBS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD29324-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2
1	TD29324-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.2	0	1.2

Appendix A Laboratory Data Package Cover Page

TD29324 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	11/5/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/5/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29324**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1890, VZ5975, VZ5983**

# [1]	A [2]	DESCRIPTION	YES	NO	NA [3]	NR [4]	ER # [5]
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	**OI**	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	**OI**	**Test reports**					
		Were samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TIC's reported?			X		
R4	**O**	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	**OI**	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations <MQL?	X				
R6	**OI**	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			**2**
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X			**2**
		Were the MS/MSD RPDs within laboratory QC limits?	X				
R8	**OI**	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	**OI**	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?		X			**3**
R10	**OI**	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

Laboratory Name:		Accutest Gulf Coast	LRC Date:	11/5/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD29324				
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):	VR1890, VZ5975, VZ5983				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?			X			2
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**11/5/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD29324**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VR1890, VZ5975, VZ5983**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5975-MB	Z70362.D	1	10/26/18	FT	n/a	n/a	VZ5975

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-1, TD29324-3, TD29324-4, TD29324-5, TD29324-6

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5983-MB	Z70498.D	1	10/30/18	FI	n/a	n/a	VZ5983

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	72-122%

Method Blank Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5983-MB	Z70498.D	1	10/30/18	FI	n/a	n/a	VZ5983

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	96%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	104%	72-126%

Method Blank Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1890-MB	R03478601.D	1	11/01/18	FT	n/a	n/a	VR1890

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Compound	Result	RL	MDL	Units	Q
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	112%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	103%	72-126%

Blank Spike Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5975-BS	Z70359.D	1	10/25/18	FT	n/a	n/a	VZ5975

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-1, TD29324-3, TD29324-4, TD29324-5, TD29324-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	21.5	86	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	103%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5983-BS	Z70495.D	1	10/30/18	FI	n/a	n/a	VZ5983

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	97.7	78	46-129
71-43-2	Benzene	25	23.4	94	68-119
75-27-4	Bromodichloromethane	25	26.0	104	72-118
75-25-2	Bromoform	25	24.4	98	54-123
108-90-7	Chlorobenzene	25	23.9	96	74-120
67-66-3	Chloroform	25	23.3	93	73-122
75-15-0	Carbon disulfide	25	25.7	103	55-140
56-23-5	Carbon tetrachloride	25	30.3	121	68-133
75-34-3	1,1-Dichloroethane	25	23.7	95	72-121
75-35-4	1,1-Dichloroethylene	25	25.9	104	67-140
107-06-2	1,2-Dichloroethane	25	23.4	94	68-121
78-87-5	1,2-Dichloropropane	25	24.2	97	72-116
124-48-1	Dibromochloromethane	25	24.8	99	68-119
156-59-2	cis-1,2-Dichloroethylene	25	24.1	96	72-117
10061-01-5	cis-1,3-Dichloropropene	25	25.6	102	71-118
10061-02-6	trans-1,3-Dichloropropene	25	25.1	100	72-127
100-41-4	Ethylbenzene	25	24.6	98	71-117
591-78-6	2-Hexanone	125	114	91	49-124
108-10-1	4-Methyl-2-pentanone	125	108	86	54-122
74-87-3	Methyl chloride	25	19.0	76	50-145
75-09-2	Methylene chloride	25	22.5	90	60-125
78-93-3	Methyl ethyl ketone	125	110	88	51-129
100-42-5	Styrene	25	24.7	99	74-119
71-55-6	1,1,1-Trichloroethane	25	26.8	107	72-129
79-34-5	1,1,2,2-Tetrachloroethane	25	24.5	98	62-121
79-00-5	1,1,2-Trichloroethane	25	23.8	95	70-119
127-18-4	Tetrachloroethylene	25	25.7	103	72-132
108-88-3	Toluene	25	23.6	94	73-119
79-01-6	Trichloroethylene	25	25.4	102	73-121
75-01-4	Vinyl chloride	25	18.9	76	54-126
1330-20-7	Xylene (total)	75	73.9	99	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	72-122%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ5983-BS	Z70495.D	1	10/30/18	FI	n/a	n/a	VZ5983

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	68-124%
2037-26-5	Toluene-D8	98%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1890-BS	R03478599.D	1	11/01/18	FT	n/a	n/a	VR1890

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-00-3	Chloroethane	25	28.7	115	61-132
156-60-5	trans-1,2-Dichloroethylene	25	27.6	110	68-124
74-83-9	Methyl bromide	25	35.6	142* [a]	53-138

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	105%	72-122%
17060-07-0	1,2-Dichloroethane-D4	114%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	105%	72-126%

(a) Outside control limits biased high.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29212-8MS	Z70372.D	100	10/26/18	FT	n/a	n/a	VZ5975
TD29212-8MSD	Z70373.D	100	10/26/18	FT	n/a	n/a	VZ5975
TD29212-8	Z70382.D	50	10/26/18	FT	n/a	n/a	VZ5975
TD29212-8 [a]	Z70371.D	100	10/26/18	FT	n/a	n/a	VZ5975

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-1, TD29324-3, TD29324-4, TD29324-5, TD29324-6

CAS No.	Compound	TD29212-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	ND		2500	2240	87	2500	2180	85	3	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD29212-8	TD29212-8	Limits
1868-53-7	Dibromofluoromethane	101%	100%	98%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	106%	106%		68-124%
2037-26-5	Toluene-D8	100%	101%	102%		80-119%
460-00-4	4-Bromofluorobenzene	100%	101%	106%		72-126%

(a) Sample used for QC purposes only.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29319-3MS	Z70500.D	10	10/30/18	FI	n/a	n/a	VZ5983
TD29319-3MSD	Z70501.D	10	10/30/18	FI	n/a	n/a	VZ5983
TD29319-3	Z70499.D	10	10/30/18	FI	n/a	n/a	VZ5983

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Compound	TD29319-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		1250	945	76	1250	889	71	6	46-129/25
71-43-2	Benzene	1830		250	2020	76	250	1970	56* [a]	3	68-119/12
75-27-4	Bromodichloromethane	ND		250	242	97	250	240	96	1	72-118/16
75-25-2	Bromoform	ND		250	221	88	250	220	88	0	54-123/17
108-90-7	Chlorobenzene	ND		250	228	91	250	223	89	2	74-120/12
67-66-3	Chloroform	ND		250	221	88	250	216	86	2	73-122/13
75-15-0	Carbon disulfide	ND		250	239	96	250	234	94	2	55-140/24
56-23-5	Carbon tetrachloride	ND		250	274	110	250	278	111	1	68-133/20
75-34-3	1,1-Dichloroethane	ND		250	224	90	250	220	88	2	72-121/14
75-35-4	1,1-Dichloroethylene	ND		250	247	99	250	241	96	2	67-140/18
107-06-2	1,2-Dichloroethane	ND		250	217	87	250	211	84	3	68-121/12
78-87-5	1,2-Dichloropropane	ND		250	232	93	250	227	91	2	72-116/12
124-48-1	Dibromochloromethane	ND		250	231	92	250	225	90	3	68-119/15
156-59-2	cis-1,2-Dichloroethylene	ND		250	229	92	250	221	88	4	72-117/13
10061-01-5	cis-1,3-Dichloropropene	ND		250	240	96	250	237	95	1	71-118/18
10061-02-6	trans-1,3-Dichloropropene	ND		250	234	94	250	229	92	2	72-127/17
100-41-4	Ethylbenzene	470		250	717	99	250	694	90	3	71-117/12
591-78-6	2-Hexanone	ND		1250	1110	89	1250	1080	86	3	49-124/21
108-10-1	4-Methyl-2-pentanone	ND		1250	1050	84	1250	1030	82	2	54-122/20
74-87-3	Methyl chloride	ND		250	204	82	250	200	80	2	50-145/17
75-09-2	Methylene chloride	ND		250	215	86	250	211	84	2	60-125/16
78-93-3	Methyl ethyl ketone	ND		1250	1050	84	1250	1020	82	3	51-129/22
100-42-5	Styrene	4.7	J	250	245	96	250	239	94	2	74-119/19
71-55-6	1,1,1-Trichloroethane	ND		250	248	99	250	244	98	2	72-129/14
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	229	92	250	224	90	2	62-121/17
79-00-5	1,1,2-Trichloroethane	ND		250	232	93	250	223	89	4	70-119/13
127-18-4	Tetrachloroethylene	ND		250	247	99	250	238	95	4	72-132/14
108-88-3	Toluene	19.4		250	248	91	250	240	88	3	73-119/13
79-01-6	Trichloroethylene	ND		250	244	98	250	234	94	4	73-121/13
75-01-4	Vinyl chloride	ND		250	210	84	250	204	82	3	54-126/17
1330-20-7	Xylene (total)	103		750	816	95	750	793	92	3	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD29319-3	Limits
1868-53-7	Dibromofluoromethane	96%	97%	95%	72-122%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29319-3MS	Z70500.D	10	10/30/18	FI	n/a	n/a	VZ5983
TD29319-3MSD	Z70501.D	10	10/30/18	FI	n/a	n/a	VZ5983
TD29319-3	Z70499.D	10	10/30/18	FI	n/a	n/a	VZ5983

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Surrogate Recoveries	MS	MSD	TD29319-3	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	95%	98%	68-124%
2037-26-5	Toluene-D8	99%	97%	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	99%	102%	72-126%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD29324
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD29446-11MS	R03478605.D	100	11/01/18	FT	n/a	n/a	VR1890
TD29446-11MSD	R03478606.D	100	11/01/18	FT	n/a	n/a	VR1890
TD29446-11	R03478603.D	100	11/01/18	FT	n/a	n/a	VR1890

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD29324-2

CAS No.	Compound	TD29446-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-00-3	Chloroethane	ND		2500	2650	106	2500	2760	110	4	61-132/16
156-60-5	trans-1,2-Dichloroethylene	ND		2500	2680	107	2500	2960	118	10	68-124/15
74-83-9	Methyl bromide	ND		2500	3410	136	2500	3910	156*	14	53-138/16

CAS No.	Surrogate Recoveries	MS	MSD	TD29446-11	Limits
1868-53-7	Dibromofluoromethane	105%	106%	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	113%	112%	115%	68-124%
2037-26-5	Toluene-D8	103%	100%	100%	80-119%
460-00-4	4-Bromofluorobenzene	105%	105%	104%	72-126%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Dow Chemical Company

DOWMIM (Jacobs)

CHARLIE BURCH

SGS Job Number: TD31221

Sampling Date: 11/29/18

Report to:

Jacobs
5995 Rogerdale Rd.
Houston, TX 77072
DowTXDM@jacobs.com; John.Ynfante@jacobs.com;
Joshua.McFarlain@Jacobs.com; Ashley.Rivera@Jacobs.com;
ATTN: Josh McFarlain

Total number of pages in report: 27

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

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SGS North America Inc.

Sample Summary

Dow Chemical Company

Job No: TD31221

DOWMIM (Jacobs)
Project No: CHARLIE BURCH

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD31221-1	11/29/18	11:35		11/30/18	AQ	Ground Water	TRW-CB-2-181129
TD31221-2	11/29/18	13:35		11/30/18	AQ	Ground Water	TRW-CB-3-181129
TD31221-3	11/29/18	14:10		11/30/18	AQ	Ground Water	TRW-CB-4-181129
TD31221-4	11/29/18	15:30		11/30/18	AQ	Ground Water	MW-CB-15AS-181129
TD31221-5	11/29/18	00:00		11/30/18	AQ	Ground Water	DUP-01-181129
TD31221-6	11/29/18	09:00		11/30/18	AQ	Trip Blank Water	TB01-181129

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Dow Chemical Company **Job No** TD31221

Site: DOWMIM (Jacobs) **Report Date** 12/13/2018 4:46:05 P

5 Samples and 1 Trip Blank were collected on 11/29/2018 and received intact at SGS North America Inc (SGS) on 11/30/2018 and properly preserved in 1 cooler at 0.8 Deg C. The samples received an Accutest job number of TD31221. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VZ6034

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD31279-1MS, TD31279-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VZ6035

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Due to insufficient sample volume, a Matrix Spike and Matrix Spike Duplicate analysis could not be performed. A Blank Spike and a Blank Spike Duplicate were performed for the QC batch and precision and accuracy criteria were met.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD31221
Account: Dow Chemical Company
Project: DOWMIM (Jacobs)
Collected: 11/29/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD31221-1	**TRW-CB-2-181129**					
1,2-Dichloroethane		0.0013	0.0010	0.00040	mg/l	SW846 8260C
TD31221-2	**TRW-CB-3-181129**					
No hits reported in this sample.						
TD31221-3	**TRW-CB-4-181129**					
No hits reported in this sample.						
TD31221-4	**MW-CB-15AS-181129**					
No hits reported in this sample.						
TD31221-5	**DUP-01-181129**					
1,2-Dichloroethane		0.0012	0.0010	0.00040	mg/l	SW846 8260C
TD31221-6	**TB01-181129**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TRW-CB-2-181129		
Lab Sample ID:	TD31221-1	**Date Sampled:**	11/29/18
Matrix:	AQ - Ground Water	**Date Received:**	11/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71381.D	1	12/03/18 14:28	FT	n/a	n/a	VZ6034
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0013	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRW-CB-3-181129		
Lab Sample ID:	TD31221-2	**Date Sampled:**	11/29/18
Matrix:	AQ - Ground Water	**Date Received:**	11/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71409.D	1	12/04/18 13:59	FT	n/a	n/a	VZ6035
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRW-CB-4-181129		
Lab Sample ID:	TD31221-3	**Date Sampled:**	11/29/18
Matrix:	AQ - Ground Water	**Date Received:**	11/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71410.D	1	12/04/18 14:23	FT	n/a	n/a	VZ6035
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	102%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-CB-15AS-181129
Lab Sample ID: TD31221-4
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 11/29/18
Date Received: 11/30/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71411.D	1	12/04/18 14:48	FT	n/a	n/a	VZ6035
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-01-181129		
Lab Sample ID:	TD31221-5	**Date Sampled:**	11/29/18
Matrix:	AQ - Ground Water	**Date Received:**	11/30/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	DOWMIM (Jacobs)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71412.D	1	12/04/18 15:12	FT	n/a	n/a	VZ6035
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.0012	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB01-181129
Lab Sample ID: TD31221-6
Matrix: AQ - Trip Blank Water
Method: SW846 8260C
Project: DOWMIM (Jacobs)

Date Sampled: 11/29/18
Date Received: 11/30/18
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71404.D	1	12/04/18 11:58	FT	n/a	n/a	VZ6035
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MQL	SDL	Units	Q
107-06-2	1,2-Dichloroethane	0.00040 U	0.0010	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	101%		80-119%
460-00-4	4-Bromofluorobenzene	101%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # TD31221

Client / Reporting Information

Company Name: ~~Parsons Corporation~~ JACOBS
Street Address: ~~1900 West Loop S. #400~~ 5985 Rodgerdale RD
City: Houston State: TX Zip: 77072
Project Contact: ~~Sandra de las Fuentes~~ John Infante E-mail:
Phone #: ~~713-971-7000~~ 281-414-1719 Fax #:
Sampler(s) Name(s): DAVID ROWAN Phone #: 210.240.0923

Project Information

Project Name: Charlie Burch
Street:
City: State:
Project #: 701411.01.GW
Client Purchase Order #:
Project Manager: Joshua McFarlain

Billing Information (if different from Report to)
Company Name: Rohm & Haas (Dow)
Street Address:
City: State: Zip:
Attention:

Requested Analyses: 1,2-Dichloroethane (DCA) 5/8260

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	1,2-Dichloroethane (DCA) 5/8260	LAB USE ONLY
1	TRW-CB-2-181129	11/29/18	1135	DR	GW	3	3												X	
2	TRW-CB-3-181129	11/29/18	1335		GW	3	3												X	
3	TRW-CB-4-181129	11/29/18	1410		GW	3	3												X	
4	MW-CB-15AS-181129	11/29/18	1530		GW	3	3												X	
5	DWP-01-181129	11/29/18	NG		GW	3	3												X	
6	TB01-181129	11/29/18	0900		LIQ	2	2													

VERIFIED BY:

Turnaround Time (Business days)

- [ ] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

DOWMIM15655

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	11/30/18 0845	1 [signature] 11-30-18 0845	2		2
3		3	4		4
5		5	Custody Seal # ☐ Intact ☐ Not intact	Preserved where applicable ☑	On Ice ☑ Cooler Temp. 0.8

5.1

5

TD31221: Chain of Custody
Page 1 of 4

SGS

COOLER TEMP FORM

TC# TD31221

Delivered by (circle one): FedEx/UPS ALGC Driver (Client)

Date: 1-30-18

Client: JACOBS

Cooler Number:

Thermometer ID: TH9 CF, °C 0.0 Corrected Temp, °C 0.8

SAMPLES CONTAINED IN COOLER

SM027
Rev. 7
1/3/18

5.1 5

TD31221: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: TD31221 **Client:** JACOBS **Project:** CHARLIE BURCH

Date / Time Received: **Delivery Method:** Client **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (0.8/0.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: TD31221 **Date / Time Received:** 11/30/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD31221-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD31221-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD31221 This data package consists of

□□□	This signature page, the laboratory review checklist, and the following reportable data:		
□□□	R1	Field chain-of-custody documentation;	
□□□	R2	Sample identification cross-reference;	
□□□	R3	Test reports (analytical data sheets) for each environmental sample that includes:	
		a)	Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b)	dilution factors,
		c)	preparation methods,
		d)	cleanup methods, and
		e)	if required for the project, tentatively identified compounds (TICs).
□□□	R4	Surrogate recovery data including:	
		a)	Calculated recovery (%R), and
		b)	The laboratory's surrogate QC limits.
□□□	R5	Test reports/summary forms for blank samples;	
□□□	R6	Test reports/summary forms for laboratory control samples (LCSs) including:	
		a)	LCS spiking amounts,
		b)	Calculated %R for each analyte, and
		c)	The laboratory's LCS QC limits.
□□□	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:	
		a)	Samples associated with the MS/MSD clearly identified,
		b)	MS/MSD spiking amounts,
		c)	Concentration of each MS/MSD analyte measured in the parent and spiked
		d)	Calculated %Rs and relative percent differences (RPDs), and
		e)	The laboratory's MS/MSD QC limits
□□□	R8	Laboratory analytical duplicate (if applicable) recovery and precision:	
		a)	The amount of analyte measured in the duplicate,
		b)	The calculated RPD, and
		c)	The laboratory's QC limits for analytical duplicates.
□□□	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method	
□□□	R10	Other problems or anomalies.	

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	12/13/2018

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**12/13/2018**					
Project Name:		**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD31221**					
Reviewer Name:		**Elessa Sommers**	Prep Batch Number(s):	**VZ6034, VZ6035**					
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]	
R1	**OI**	**CHAIN-OF-CUSTODY (C-O-C):**							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X					
		Were all departures from standard conditions described in an exception report?		X					
R2	**OI**	**Sample and quality control (QC) identification**							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		X					
R3	**OI**	**Test reports**							
		Were samples prepared and analyzed within holding times?		X					
		Other than those results <MQL, were all other raw values bracketed by calibration standards?		X					
		Were calculations checked by a peer or supervisor?		X					
		Were all analyte identifications checked by a peer or supervisor?		X					
		Were sample detection limits reported for all analytes not detected?		X					
		Were all results for soil and sediment samples reported on a dry weight basis?				X			
		Were % moisture (or solids) reported for all soil and sediment samples?				X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?				X			
		If required for the project, are TIC's reported?				X			
R4	**O**	**Surrogate recovery data**							
		Were surrogates added prior to extraction?		X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X					
R5	**OI**	**Test reports/summary forms for blank samples**							
		Were appropriate type(s) of blanks analyzed?		X					
		Were blanks analyzed at the appropriate frequency?		X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		X					
		Were blank concentrations <MQL?		X					
R6	**OI**	**Laboratory control samples (LCS):**							
		Were all COCs included in the LCS?		X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		X					
		Were LCSs analyzed at required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?		X					
		Was the LCSD RPD within QC limits?		X					
R7	**OI**	**Matrix spike (MS) and matrix spike duplicate (MSD) data**							
		Were the project/method specified analytes included in the MS and MSD?		X					
		Were MS/MSD analyzed at the appropriate frequency?			X			**2**	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?		X					
		Were the MS/MSD RPDs within laboratory QC limits?		X					
R8	**OI**	**Analytical duplicate data**							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	**OI**	**Method quantitation limits (MQLs):**							
		Are the MQLs for each method analyte included in the laboratory data package?		X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**3**	
R10	**OI**	**Other problems/anomalies**							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		X					
		Was applicable and available technology used to lower the SDL to minimize the matrix		X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?		X					

Laboratory Name:		Accutest Gulf Coast	LRC Date:	12/13/2018				
Project Name:		DOWMIM (Jacobs)	Laboratory Project Number:	TD31221				
Reviewer	Name:	Elessa Sommers	Prep Batch Number(s):	VZ6034, VZ6035				
#[1]	A[2]	DESCRIPTION		YES	NO	NA[3]	NR[4]	ER #[5]
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?		X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for all analytes?		X				
		Were all points generated between the lowest and highest standard used to calculate the curve?		X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate second source standard?		X				
S2	OI	**Initial and continuing calibration verification (ICCV AND CCV) and continuing**						
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-required QC limits?		X				
		Was the ICAL curve verified for each analyte?		X				
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?				X		
S3	O	**Mass spectral tuning**						
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required QC limits?		X				
S4	O	**Internal standards (IS)**						
		Were IS area counts and retention times within the method-required QC limits?		X				
S5	OI	**Raw data (NELAC Section 5.5.10)**						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		X				
		Were data associated with manual integrations flagged on the raw data?		X				
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?				X		
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?				X		
S8	I	**Interference Check Sample (ICS) results**						
		Were percent recoveries within method QC limits?				X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X		
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	OI	**Proficiency test reports**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		X				
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?		X				
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?		X				
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on file?		X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**						
		Are all the methods used to generate the data documentated, verified, and validated, where applicable?		X				
S16	OI	**Laboratory standard operating procedures (SOPs)**						
		Are laboratory SOPs current and on file for each method performed?		X				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**12/13/2018**
Project Name:	**DOWMIM (Jacobs)**	Laboratory Project Number:	**TD31221**
Reviewer Name:	**Elessa Sommers**	Prep Batch Number(s):	**VZ6034, VZ6035**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative.
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD31221
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6034-MB	Z71370.D	1	12/03/18	FT	n/a	n/a	VZ6034

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31221-1

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Method Blank Summary

Job Number: TD31221
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6035-MB	Z71402.D	1	12/04/18	FT	n/a	n/a	VZ6035

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31221-2, TD31221-3, TD31221-4, TD31221-5, TD31221-6

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	98%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	102%	72-126%

Blank Spike Summary

Job Number: TD31221
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6034-BS	Z71368.D	1	12/03/18	FT	n/a	n/a	VZ6034

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31221-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	25	21.8	87	68-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	72-122%
17060-07-0	1,2-Dichloroethane-D4	102%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: TD31221
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6035-BS	Z71398.D	1	12/04/18	FT	n/a	n/a	VZ6035
VZ6035-BSD [a]	Z71399.D	1	12/04/18	FT	n/a	n/a	VZ6035

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31221-2, TD31221-3, TD31221-4, TD31221-5, TD31221-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	25	22.4	90	22.4	90	0	68-121/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	102%	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	95%	68-124%
2037-26-5	Toluene-D8	100%	100%	80-119%
460-00-4	4-Bromofluorobenzene	98%	100%	72-126%

(a) Insufficient sample available for MS/MSD.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD31221
Account: DOWMIM Dow Chemical Company
Project: DOWMIM (Jacobs)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD31279-1MS	Z71379.D	200	12/03/18	FT	n/a	n/a	VZ6034
TD31279-1MSD	Z71380.D	200	12/03/18	FT	n/a	n/a	VZ6034
TD31279-1 [a]	Z71377.D	25	12/03/18	FT	n/a	n/a	VZ6034
TD31279-1 [b]	Z71373.D	200	12/03/18	FT	n/a	n/a	VZ6034

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD31221-1

CAS No.	Compound	TD31279-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-06-2	1,2-Dichloroethane	ND		5000	4510	90	5000	4630	93	3	68-121/12

CAS No.	Surrogate Recoveries	MS	MSD	TD31279-1	TD31279-1	Limits
1868-53-7	Dibromofluoromethane	101%	99%	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	96%	96%	100%		68-124%
2037-26-5	Toluene-D8	100%	99%	101%		80-119%
460-00-4	4-Bromofluorobenzene	98%	99%	99%		72-126%

(a) Dilution required due to high concentrations of non target analytes.
(b) Sample used for QC purposes only.

* = Outside of Control Limits.

Appendix D
Data Usability Summary

1. Introduction

A Jacobs project chemist reviewed seven data packages from SGS Laboratories of Houston, Texas for the analysis of groundwater samples collected April 17 to November 29, 2018 at the Charlie Burch Pits Site, Spring, Texas (site). Data were reviewed for conformance to the requirements of the Texas Commission on Environmental Quality (TCEQ) guidance document, *Review and Reporting of COC Concentration Data Under TRRP* (RG-366/Texas Risk Reduction Program [TRRP]-13) and adherence to project objectives.

Jacobs asserts that at the time the laboratory data were generated for the project, the laboratory was accredited by the National Environmental Laboratory Accreditation Conference under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analyses requested on the chain-of-custody documentation. A copy of the National Environmental Laboratory Accreditation Program certificates applicable to the period during which the laboratories generated the data in this report is included with this data usability summary (DUS) as an attachment.

Intended Use of Data: The laboratory data included in this report provide information on concentrations of the chemicals of concern (COCs) in the groundwater at the site to support the preparation of the annual groundwater monitoring report for 2018.

The following analyses were performed:

- SW-846 5030/8260C - Volatile Organic Compounds (VOC) by Gas Chromatography/Mass Spectrometry (GC/MS)
- SW-846 3510C/8270D - Semivolatile Organic Compounds (SVOCs) by GC/MS

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data Under TRRP,* (RG-366/TRRP-13). The results of the review and validation are discussed in this DUS. The following laboratory submittals were examined:

- Reportable data
- Laboratory review checklists (LRCs) and associated exception reports (ERs)
- Observations regarding sampling procedures, and preservation procedures before shipping the samples to the laboratory

The results of supporting quality control (QC) analyses were summarized in the LRCs, ERs, and case narratives. The LRCs, associated ERs, and reportable data included in this review are attached to this DUS.

2. Samples

A total of 58 groundwater samples were analyzed for VOCs and 6 groundwater samples were analyzed for SVOCs. Additionally, field QC samples analyzed included eight field duplicates, seven trip blanks, and one equipment rinsate blank. Table D-1 lists the sample identifications cross-referenced to laboratory identifications.

Table D-1. Cross-referenced Field Sample Identifications and Laboratory Identifications
Charlie Burch Pits Site, Spring, Texas

Field Identification	Laboratory Identification	Matrix	Date Collected
MW-CB-45-20180417	TD19824-1	Water	4/17/2018
MW-CB-48-20180417	TD19824-2	Water	4/17/2018
MW-CB-44-20180417	TD19824-3	Water	4/17/2018
MW-CB-44-20180417-DUP	TD19824-4	Water	4/17/2018
MW-CB-40-20180417	TD19824-5	Water	4/17/2018
TB-01-20180417	TD19824-6	Water	4/17/2018

Table D-1. Cross-referenced Field Sample Identifications and Laboratory Identifications

Charlie Burch Pits Site, Spring, Texas

Field Identification	Laboratory Identification	Matrix	Date Collected
RW-CB-4R-20181610	TD28973-1	Water	10/16/2018
RW-CB-3R-20181610	TD28973-2	Water	10/16/2018
RW-CB-2R-20181610	TD28973-3	Water	10/16/2018
RW-CB-3D-20181610	TD28973-4	Water	10/16/2018
RW-CB-5R-20181610	TD28973-5	Water	10/16/2018
DUP-CB-XX-20181610	TD28973-6	Water	10/16/2018
TB-01-20181610	TD28973-7	Water	10/16/2018
MW-CB-7B-181017	TD29032-1	Water	10/17/2018
MW-CB-4-181017	TD29032-2	Water	10/17/2018
MW-CB-1BS-181017	TD29032-3	Water	10/17/2018
RW-CB-2-181017	TD29032-4	Water	10/17/2018
RW-CB-4-181017	TD29032-5	Water	10/17/2018
MW-CB-1B-181017	TD29032-6	Water	10/17/2018
MW-CB-1A-181017	TD29032-7	Water	10/17/2018
OW-2-181017	TD29032-8	Water	10/17/2018
MW-CB-2A-181017	TD29032-9	Water	10/17/2018
MW-CB-2B-181017	TD29032-10	Water	10/17/2018
OBS-2-181017	TD29032-11	Water	10/17/2018
OBS-1-181017	TD29032-12	Water	10/17/2018
EAB-MW-3-181017	TD29032-13	Water	10/17/2018
DUP-02-181017	TD29032-14	Water	10/17/2018
DUP-03-181017	TD29032-15	Water	10/17/2018
TB-01-181017	TD29032-16	Water	10/17/2018
ERB-T2-181017	TD29032-17	Water	10/17/2018
MW-CB-11AS-181018	TD29138-1	Water	10/18/2018
MW-CB-41D-181018	TD29138-2	Water	10/18/2018
MW-CB-12AD-181018	TD29138-3	Water	10/18/2018
MW-CB-41S-181018	TD29138-4	Water	10/18/2018
MW-CB-12AS-181018	TD29138-5	Water	10/18/2018
MW-CB-40-181018	TD29138-6	Water	10/18/2018
MW-CB-24AS-181018	TD29138-7	Water	10/18/2018
MW-CB-39-181018	TD29138-8	Water	10/18/2018
TRW-CB-1-181018	TD29138-9	Water	10/18/2018
MW-CB-42-181018	TD29138-10	Water	10/18/2018
MW-CB-14AS-181018	TD29138-11	Water	10/18/2018
RDP-3-181018	TD29138-12	Water	10/18/2018
DUP-04-181018	TD29138-13	Water	10/18/2018
DUP-05-181018	TD29138-14	Water	10/18/2018
DUP-06-181018	TD29138-15	Water	10/18/2018
TB-01-181018	TD29138-16	Water	10/18/2018
MW-CB-6B-181019	TD29156-1	Water	10/19/2018
MW-CB-45-181019	TD29156-2	Water	10/19/2018
MW-CB-48-181019	TD29156-3	Water	10/19/2018
RDP-5-181019	TD29156-4	Water	10/19/2018
MW-CB-47S-181019	TD29156-5	Water	10/19/2018
MW-CB-6BS-181019	TD29156-6	Water	10/19/2018

Table D-1. Cross-referenced Field Sample Identifications and Laboratory Identifications
Charlie Burch Pits Site, Spring, Texas

Field Identification	Laboratory Identification	Matrix	Date Collected
MW-CB-46S-181019	TD29156-7	Water	10/19/2018
MW-CB-25A-181019	TD29156-8	Water	10/19/2018
MW-CB-43-181019	TD29156-9	Water	10/19/2018
MW-CB-44-181019	TD29156-10	Water	10/19/2018
MW-CB-37S-181019	TD29156-11	Water	10/19/2018
MW-CB-38-181019	TD29156-12	Water	10/19/2018
MW-CB-36-181019	TD29156-13	Water	10/19/2018
MW-CB-33A-181019	TD29156-14	Water	10/19/2018
MW-CB-28A-181019	TD29156-15	Water	10/19/2018
TB-01-181019	TD29156-16	Water	10/19/2018
MW-CB-26A-181024	TD29324-1	Water	10/24/2018
EAB-MW-2-181024	TD29324-2	Water	10/24/2018
MW-CB-13AS-181024	TD29324-3	Water	10/24/2018
MW-CB-8AD-181024	TD29324-4	Water	10/24/2018
MW-CB-16AS-181024	TD29324-5	Water	10/24/2018
TB-01-181024	TD29324-6	Water	10/24/2018
TRW-CB-2-181129	TD31221-1	Water	11/29/2018
TRW-CB-3-181129	TD31221-2	Water	11/29/2018
TRW-CB-4-181129	TD31221-3	Water	11/29/2018
MW-CB-15AS-181129	TD31221-4	Water	11/29/2018
DUP-01-181129	TD31221-5	Water	11/29/2018
TB01-181129	TD31221-6	Water	11/29/2018

2.1 Project Measurement Quality Objectives

Organic Analytes:

- Recovery 60% to 140% or laboratory control limits
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) relative percent difference (RPD) less than or equal to 20% or laboratory control limits
- Matrix spike (MS)/matrix spike duplicate (MSD) RPD less than or equal to 20% or laboratory control limits
- Sample and field duplicate RPD less than or equal to 30% or plus or minus 2 times the method quantitation limit (MQL) if concentrations are less than 5 times MQL
- Completeness 95%

3. Data Review and Validation Results

3.1 Analytical Results

Nondetected results are reported as less than the sample detection limit (SDL) as defined by the TRRP rule. Data qualified during the data validation process are listed in Table D-2.

Table D-2. Qualified Analytical Data
Charlie Burch Pits Site, Spring, Texas

Field Identification	Analytical Method	Analyte	Result	Units	Qualification	Reason for Qualification
MW-CB-1B-181017	8260C	1,2-Dichloroethane	0.0015	mg/l	J	Field duplicate RPD > 30%.
DUP-02-181017	8260C	1,2-Dichloroethane	0.0061	mg/l	J	Field duplicate RPD > 30%.
MW-CB-40-181018	8260C	1,2-Dichloroethane	0.0292	mg/l	J	Field duplicate RPD > 30%.
DUP-05-181018	8260C	1,2-Dichloroethane	0.021	mg/l	J	Field duplicate RPD > 30%.

mg/L = milligram per liter
J = Estimated data; the reported sample concentration is approximated due to exceedance of one or more QC requirements.

3.2 Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody documentation. Samples were received in the appropriate containers and in good condition with proper completion of the chain-of-custody documentation except for sample MW-CB-40-20180417 which was incorrectly labeled as MW-CB-44-20180417 on the bottle labels. Based on the time collected and other information on the chain-of-custody, the other sample containers present, and discussion with the sampler it was determined that the bottle was mislabeled as CB-44 and the sample was logged in as correctly recorded on the chain-of-custody as MW-CB-40-20180417.

Sample receipt temperatures were within the acceptance criteria of 4 ± 2 degrees Celsius (°C) except for coolers that arrived at temperature below 2°C but did not exhibit any impact to samples and thus did not require data qualification. Samples were preserved as specified in SW-846 Tables 2-40(A) and 2-40(B). Samples were prepared and analyzed within holding times specified in SW-846 Tables 2-40(A) and 2-40(B).

3.3 Calibrations and Tunes

According to the LRCs and case narratives, initial calibration data met SW-846 method requirements. Acetone and methyl bromide were recovered high in a continuing calibration verification (CCV) but were not detected in any associated samples, so no data qualification was required. According to the LRCs and case narratives, other CCV data met SW-846 method requirements. The LRCs also document satisfactory instrument performance calibrations (GC/MS tunes) for the GC/MS analyses (VOCs and SVOCs).

3.4 Blanks

No target analytes were detected in any laboratory blank, trip blank, or equipment rinsate blank at any concentration that required data qualification.

3.5 Surrogate Recoveries and Internal Standard Recoveries

Surrogate recoveries for VOCs and SVOCs analyses were within acceptance criteria. According to the LRCs and case narratives, internal standard areas were within method SW-846 acceptance criteria.

3.6 Laboratory Control Samples

LCSs and LCSDs were spiked with target analytes of interest for the analytical methods. LCS/LCSD RPDs were within acceptance criteria.

Methyl bromide was recovered high in one LCS but was not detected in any associated samples, so no data qualification was required. Other LCS and LCSD recoveries were within acceptance criteria.

3.7 Matrix Spike and Matrix Spike Duplicates

MS/MSDs were spiked with target analytes of interest for the analytical methods. MS/MSD recoveries and RPDs were within acceptance criteria.

3.8 Field Precision

Table D-3 summarizes field duplicate precision calculations. Field duplicate precision was not calculated for results where both the normal and field duplicate results were reported as not detected (U). Based on the RPD between the concentrations detected and the proximity of the concentrations to the MQL, field duplicate precision was within the project acceptance criteria except for 1,2-dichloroethane results in samples MW-CB-1B-181017 and MW-CB-40-181018 and their associated field duplicates which exhibited RPDs greater than 30% and were therefore qualified as estimated (J).

3.9 Field Procedures

Samples were collected following standard operating procedures detailed in the project sampling instructions.

Table D-3. Field Precision

Charlie Burch Pits Site, Spring, Texas

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
RW-CB-3D-20181610 / DUP-CB-XX-20181610	1,2-Dichloroethane	0.0133	0.0125	6.2%	A
MW-CB-1B-181017 / DUP-02-181017	1,2-Dichloroethane	0.0015	0.0061	121%	J
EAB-MW-3-181017 / DUP-03-181017	1,2-Dichloroethane	0.0326	0.0325	0.3%	A
EAB-MW-3-181017 / DUP-03-181017	Chloroethane	0.00035 U	0.00041 J	16%	A
MW-CB-12AS-181018 / DUP-04-181018	1,2-Dichloroethane	0.0101	0.0077	27%	A
MW-CB-40-181018 / DUP-05-181018	1,2-Dichloroethane	0.0292	0.021	33%	J
RDP-3-181018 / DUP-06-181018	1,2-Dichloroethane	0.0261	0.0255	2.3%	A
TRW-CB-2-181129 / DUP-01-181129	1,2-Dichloroethane	0.0013	0.0012	8.0%	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A = Acceptable Data
J (in Sample Result or Duplicate Result column) = Result > SDL < MQL
J (in Qualified column) = Estimated data due to field duplicate precision outside of acceptance criteria
U = Not detected at reported detection limit
SR = Sample Result
DR = Duplicate Result
MQL = method quantitation limit
RPD = relative percent difference
SDL = sample detection limit

4. Summary

Overall, the quality of the analytical data was found to be within the QC limits established by the project data quality objectives, the analytical methods, and the review criteria presented in *Review and Reporting of COC Concentration Data Under TRRP* (RG-366/TRRP-13).

The following data quality indicators were found to be within project acceptance criteria and did not require data qualification:

- Sample receipt conditions
- Sample preservation
- Holding times

- Initial calibrations
- Continuing calibration verification
- Instrument performance calibrations
- Blanks
- Internal standard recoveries
- Surrogate recoveries
- LCS/LCSD recoveries and RPDs
- MS/MSD recoveries and RPDs

The only QC issue encountered that required data qualification was RPDs greater than 30% for 1,2-dichloroethane in the field duplicates associated with samples MW-CB-1B-181017 and MW-CB-40-181018. Results qualified based on this issue are described herein and listed in Table D-2.

No results were rejected, giving the data set a 100% completeness. Analytical results may be used to support project decision.