King County Department of Natural Resources and Parks

Solid Waste Division

Phase 1 – Interim Actions

CONTRACT NO. E00286E12

Cedar Hills Regional Landfill – EPZ Phase I Interim Actions – Third Round, May 2019 Soil Gas Sampling Technical Memorandum

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Natural Resources and Parks
Solid Waste Division

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CEDAR HILLS REGIONAL LANDFILL – EPZ PHASE I INTERIM ACTIONS – THIRD ROUND, MAY 2019 SOIL GAS SAMPLING TECHNICAL MEMORANDUM

Prepared for: King County Solid Waste Division

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1.0 INTRODUCTION

Aspect Consulting, LLC (Aspect) prepared this Technical Memorandum (Tech Memo) under King County Contract No. E00286E12 to summarize the results from the May 2019 soil gas sampling at selected landfill gas (LFG) probes and monitoring wells installed at the Cedar Hills Regional Landfill East Perched Zones (CHRLF EPZ; the Site) and the east-adjoining Passage Point facility. Soil gas sampling activities described in this Tech Memo included purging, monitoring and sampling soil gas probes and monitoring wells that were included in the baseline soil gas monitoring of the CHRLF EPZ. The number and location of gas probes and monitoring wells to be sampled was prescribed in Table 3.2 of the East Perched Zones Remedial Investigation and Feasibility Study (Aspect, 2016 DRAFT). LFG optimization activities were initiated in December 2018. The May 2019 soil gas sampling event was the second round to take place since LFG optimization was initiated, the intent of which was to monitor and evaluate the effectiveness of optimization. The soil gas sampling scope of work included the following:

- **Pre-sampling preparation,** including the removal of dedicated pumps from monitoring well EB-6D and installation of specialized well caps with a suitable port for soil gas sampling at monitoring wells EB-6D and MW-102. Additionally, water levels were measured at all sampling locations to allow for equilibration for at least five days prior to soil gas sampling.
- **Soil gas sampling fieldwork,** including screening for LFG (methane, carbon dioxide, and oxygen) levels using a GEM 2000 multi-gas meter, purging, and sampling at 20 sampling locations. Sampling locations include:
    - Nine shallow sampling locations including gas probes: GP-16A, GP-18A, GP-19A, GP-20A, GP-56, GP-60, GP-62, GP-63A, and GP-64A
    - Eleven deep sampling locations including gas probes and monitoring wells: GP-8, GP-16C, GP-18C, GP-19C, GP-20C, GP-63B, GP-63C, GP-64B, GP-64C, EB-6D, and MW-102

  Soil gas samples were analyzed for volatile organic compounds (VOCs) using EPA Method TO-17.
- **Review and reporting of analytical results,** including comparison of sample results to appropriate Model Toxics Control Act (MTCA) Method B soil gas screening levels and preparation of this Tech Memo.

2.0 PRE-SAMPLING PREPARATION

King County Solid Waste Division (KCSWD) staff removed the dedicated pump from monitoring well EB-6D prior to the soil gas sampling field work. On May 20, 2019, Aspect collected water level measurements from the probes and monitoring wells and placed specialized friction fitting soil gas sampling well caps on EB-6D and MW-102. Water level was measured prior to sampling at each well and gas probe location to calculate the unsaturated length of screen to ensure adequate screen length was exposed for soil gas collection.

Some of the gas probes were not accessible using a water level indicator due to the small diameter of the well casing (0.5 inches), and presence of Tygon tubing within the casing.

Water was observed in sampling locations GP-56, GP-60, GP-63A, GP-63B, GP-64A, GP-64B, EB-6D and MW-102. Table 1 presents a summary of the water measurements and notes which wells are occluded due to probe construction.

Upon collecting water levels, Aspect installed specialized friction fitting soil gas sampling well caps on EB-6D and MW-102, which allow for an air-tight seal and equilibration of gases inside the wells prior to sampling. The specialized friction fitting well caps contain ports suitable for purging and sampling soil gas from the wells. All other gas probes were sealed with their respective gas monitoring caps. The monitoring wells and gas probes equilibrated for eight days prior to sampling.

3.0 SOIL GAS SAMPLING FIELD WORK

Soil gas sampling activities were performed on May 28 and 29, 2019, in general accordance with Washington State Department of Ecology's guidance (Ecology, 2018). The barometric pressure during the sampling days was 29.38 inches of mercury and 29.48 inches of mercury, respectively. The barometric pressure was rising slightly for the three days prior to the first day of the sampling event.

Using well or gas probe construction as-builts, the length of unsaturated screen (i.e., the amount of screen that was above the top of the water level) for each well and gas probe containing water was calculated using water levels collected on May 20, 2019 to evaluate if sufficient unsaturated screen (greater than 0.25 foot) was present to collect soil gas samples. For gas probes whose construction precluded direct water level measurements, the Teflon tubing was monitored during purging for the presence of water. Condensation was observed in the Teflon tubing at GP-56, however, no water was observed, therefore the screens were not fully submerged and soil gas samples were collected. Two of the nine shallow monitoring points exhibited saturated screens and could not be sampled (GP-63A, and GP-64A). One of the nine deep monitoring points exhibited a saturated screen and could not be sampled (GP-64B).

3.1 Sampling Methods

In total, 17 soil gas samples were collected. The samples were acquired from existing wells or gas probes using existing or previously installed specialized gas sampling caps. The soil gas samples were collected using certified, laboratory-supplied sorbent tubes with dedicated sampling manifolds and a dedicated sampling train. The following method was employed during the sample point monitoring and sample collection:

1. Calculate the volume of air in the sampling location casing.
2. Conduct shut-in test on each manifold and tighten connections as necessary to decrease likelihood of air leaks. Calibrate GEM 2000 multi-gas meter.

3. Install tubing onto well cap port and connect to manifold.
4. From the junction in the manifold with a valve, connect the GEM 2000 for monitoring landfill gas (methane, carbon dioxide and oxygen) levels at each probe location during purging.
5. For sample locations with large casing volumes, connect an SKC™ low-flow vacuum pump, rotameter and GEM 2000 to the wellhead manifold. During purging, record methane, carbon dioxide, and oxygen concentrations measured by the GEM 2000 at minimum 1-minute intervals. Immediately connect sorbent tube to manifold after purge of three casing volumes.
6. For sample locations with smaller casing volumes, open the manifold valve and begin purging with the GEM 2000. The purge rate is regulated by the soil gas flow restrictor in the manifold to approximately 200 milliliters per minute (mL/min). During purging, record methane, carbon dioxide, and oxygen concentrations at minimum 20-second intervals until parameters have stabilized or until a total of three casing volumes have been purged.
7. Turn off the GEM 2000 and close the manifold valve.
8. Connect the sorbent tube to the other junction on the manifold with silicone tubing in the indicated flow direction, with an inline low-flow pump and attached rotameter for monitoring the sampling rate.
9. Set pump flow rate to 100 mL/min and sample for 6 minutes. Sorbent tube sample volume required by the analytical laboratory is 600 mL.
10. Stop sample collection, disconnect sorbent tube, place into plastic case, and record tube number on the chain of custody.

Following sample collection, the well or gas probe well caps were replaced, and the protective monuments were locked. The samples were transferred under appropriate chain-of-custody documentation to the analytical laboratory, ALS Environmental in Simi Valley, California. The samples were analyzed using EPA Method TO-17 for volatile organic compounds (VOCs). See Appendix A for the laboratory reports. Example photographs of the constructed sample trains, purging, monitoring, and sampling of the gas probes are included as Appendix B.

4.0 ANALYTICAL RESULTS

4.1 Methane

During purging of each well and gas probe location, methane levels were recorded, and final methane readings are summarized in Table 2 and depicted on Figure 1. The Ecology and Seattle-King County Public Health regulatory limit for methane detections at and beyond the landfill property boundary is the LEL for methane, which is 5 percent by volume.

Methane detection results were as follows:

- Methane was not detected in 9 of the 17 sampled locations, as shown by the green color coding on Figure 1. Five non-detect locations were shallow monitoring points (GP-16A, -20A, -56, -60, and -62) and four non-detect locations were deep monitoring points (GP-8, -16C, -63B, and -63C).
- Methane was detected at a concentration of 0.1 percent by volume at the remaining 8 of 17 sample locations, which is significantly below the regulatory limit of 5 percent by volume. These locations are indicated by the orange color coding on Figure 1. GP-18A, and GP-19A were the only shallow gas probes where methane was detected. The other six locations (GP-18C, -19C, -20C, -64C, EB-6D and MW-102) were deep gas probes.
- None of the sample locations contained methane at concentrations greater than the regulatory limit of 5 percent by volume.

4.2 Volatile Organic Compounds

Tables 3 and 4 summarize the results of detected VOCs in each shallow and deep sampling location, respectively. Detected VOCs were compared to the applicable MTCA Method B[1] screening levels for shallow (sub-slab) and deep soil gas, respective to the construction depth of the screen at each sample location. Screens constructed within 15 feet of ground surface are considered shallow while screens constructed deeper than 15 feet below ground surface are considered deep.

The following are the VOC results for the shallow sample locations:

- VOCs were detected at concentrations less than the MTCA Method B shallow (sub-slab) soil gas screening levels at seven shallow monitoring locations that were sampled (GP-16A, GP-18A, GP-19A, GP-20A, GP-56, GP-60, and GP-62), as shown by the orange color coding on Figure 2.
- No VOCs were detected at concentrations above the MTCA Method B shallow (sub-slab) soil gas screening levels in shallow sample locations during this event.

The following are the VOC results for the deep sample locations:

- VOCs were detected at concentrations less than the MTCA Method B screening levels at 10 deep soil gas sampling locations (GP-8, GP-16C, GP-18C, GP-19C, GP-20C, GP-63B, GP-63C, GP-64C, EB-6D, and MW-102), as shown by the orange color coding on Figure 2.
- No VOCs were detected at concentrations above the MTCA Method B screening levels in deep soil gas during this event

Figure 2 depicts the soil gas sampling results for the May 2019 event.

[1] Includes new and modified MTCA Method B screening levels in accordance with Ecology's May 2019 updates.

5.0 FUTURE WORK

One additional soil gas sampling event will be conducted to further monitor and evaluate the effectiveness of optimizing the LFG system in controlling migration of LFG within the CHRLF EPZ. The additional soil gas sampling event will occur in the third quarter of 2019, and brief Tech Memo will be completed after the event.

6.0 LIMITATIONS

Work for this project was performed for the King County Solid Waste Division (Client), and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Please refer to Appendix C titled "Report Limitations and Guidelines for Use" for additional information governing the use of this report.

7.0 REFERENCES

Aspect Consulting, LLC (Aspect), 2016, Cedar Hills Regional Landfill Environmental Control Systems Modifications Project, East Perched Zones Remedial Investigation and Feasibility Study, Agency Draft, December 2016.

Washington State Department of Ecology (Ecology), 2018, Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Toxics Cleanup Program, Publication no. 09-09-047, Review Draft Revised, April 2018.

TABLES

Table 1. Gas Probe Construction Information and Water Levels

Project No. 130088, Cedar Hills Regional Landfill, King County, Washington

Well ID	Well Diameter (in)	Stick-up (ft)	TOC Elevation (ft, NAVD88)	Boring Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Filter Pack Interval (ft bgs)	Depth to Water (ft bTOC)	Unsaturated Screen Length (ft)	Notes
Gas Probes										
GP-16A	0.5	1.33	629.8	8	6.5	8	6.5 - 8	Dry	1.5	
GP-16C	0.5	1.29	629.76	60	58.5	60	58.5 - 60	Dry	1.5	
GP-18A	0.5	1.49	603.76	8	6.5	8	6.5 - 8	Not accessible because of probe construction	NA	
GP-18C	0.5	1.38	603.65	45	43.5	45	43.5 - 45	Not accessible because of probe construction	NA	
GP-19A	0.5	1.06	547.3	8	6.5	8	6.5 - 8	Not accessible because of probe construction	NA	
GP-19C	0.5	1.04	547.28	31	29.5	31	29.5 - 31	Not accessible because of probe construction	NA	
GP-20A	0.5	1.56	496.6	8	6.5	8	6.5 - 8	Not accessible because of probe construction	NA	
GP-20C	0.5	1.55	496.6	88	86.5	88	86.5 - 88	Not accessible because of probe construction	NA	
GP-56	1	2.5	643.57	16	6	16	6 - 16	9.78	1.28	
GP-60	1	4.12	635.84	18	8	18	8 - 18	14.38	2.26	
GP-62	1	1.85	565.28	18	8	18	8 - 18	Dry	10	
GP-63A	0.5	2.96	637.18	8	6.5	8	5.5 - 9.0	7.86	---	No sample collected - screen submerged
GP-63B	0.5	2.98	636.95	37	32	37	31 - 38	38.21	3.23	
GP-63C	0.5	3.16	637.27	60	55	60	53 - 61	Dry	5	
GP-64A	0.5	3.13	632.66	8	6.5	8	5.5 - 9.0	6.56	---	No sample collected - screen submerged
GP-64B	0.5	2.80	632.16	25	20	25	19 - 26	22.53	---	No sample collected - screen submerged
GP-64C	0.5	2.94	632.42	59	54	59	52 - 60	Dry	5	
GP-8	0.5	1.46	642.23	46.5	44.5	46.5	44.5 - 46.5	Dry	2	
Montioring Wells										
EB-6D	2	1.75	589.61	30	20	30	16 - 30.5	28.64	6.89	
MW-102	2	2.75	552.48	49.5	34.5	49.5	32 - 50	45.85	8.60	

Notes:

ft = feet

ft, NAVD88 = feet, North America Vertical Datum of 1988.

ft bgs = feet below ground suface

ft bTOC = feet below top of casing

in = inches

NA = probe construction does not allow water level measurement

--- = screen saturated

a Ground elevation for probes listed as "Gas Probes" have been adjusted to NAVD88 by adding 3.6 feet. Original elevations were provided on borings logs in NGVD29.

Table 2. Landfill Gas Monitoring Results - May 2019

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Project No. 130088, Cedar Hills Regional Landfill, King County, Washington

Sample Location	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)
GP-16A	5/29/2019	0.0	4.7	16.0
GP-18A	5/28/2019	**0.1**	2.2	15.5
GP-19A	5/28/2019	**0.1**	0.1	20.9
GP-20A	5/29/2019	0.0	0.1	22.4
GP-8	5/28/2019	0.0	0.2	21.6
GP-56	5/28/2019	0.0	0.1	21.1
GP-60	5/28/2019	0.0	0.2	21.2
GP-62	5/28/2019	0.0	0.4	20.5
GP-63B	5/29/2019	0.0	0.1	22.6
MW-102	5/28/2019	**0.1**	3.3	17.6
EB-6D	5/28/2019	**0.1**	0.1	20.4
GP-16C	5/29/2019	0.0	0.6	21.8
GP-18C	5/28/2019	**0.1**	0.1	21.5
GP-19C	5/28/2019	**0.1**	0.0	21.1
GP-20C	5/28/2019	**0.1**	0.2	5.5
GP-63C	5/29/2019	0.0	0.1	22.5
GP-64C	5/29/2019	**0.1**	0.2	22.4

Notes:

Results presented above represent final reading prior to sample collection.

Landfill gas measurements collected using a GEM 2000 and/or GEM 5000 multi-gas meter.

Bold indicates detected methane at a concentration less than 5 percent.

The oxygen sensor malfunctioned while sampling EB-6D, so the recorded oxygen result is the last reading prior to malfunction.

Table 3. Shallow Soil Gas Sampling Results - May 2019
Project No. 130088, Cedar Hills Regional Landfill, King County, Washington

Analyte	CAS	Unit	MTCA Method B - Shallow Soil Gas Screening Level	Sample Location Sample Date Sample Code	GP-16A 5/29/2019 GP16S190529-	GP-18A 5/28/2019 GP18S190528-	GP-19A 5/28/2019 GP19S190528-	GP-20A 5/29/2019 GP20S190529-	GP-56 5/28/2019 GP56S190528-	GP-60 5/28/2019 GP60S190528-	GP-62 5/28/2019 GP62S190528-
1,1,1-Trichloroethane	71-55-6	ug/m3	76000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/m3	1.4		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,1,2-Trichloroethane	79-00-5	ug/m3	3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,1-Dichloroethane	75-34-3	ug/m3	52		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,1-Dichloroethene	75-35-4	ug/m3	3000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2,4-Trichlorobenzene	120-82-1	ug/m3	30		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2,4-Trimethylbenzene	95-63-6	ug/m3	910		< 1.8 U	**2.1**	**1.9**	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dibromo-3-Chloropropane	96-12-8	ug/m3			< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,2-Dibromoethane (EDB)	106-93-4	ug/m3	0.14		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/m3	3000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichloroethane (EDC)	107-06-2	ug/m3	3.2		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichloropropane	78-87-5	ug/m3	23		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorotetrafluoroethane;Fluorocarbon 114	76-14-2	ug/m3			< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3,5-Trimethylbenzene	108-67-8	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,3-Butadiene	106-99-0	ug/m3	2.8		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/m3			**4.2**	**21**	**73**	**170**	**120**	**190**	**220**
1,4-Dichlorobenzene	106-46-7	ug/m3	7.6		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,4-Dioxane	123-91-1	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
2,2,4-Trimethylpentane	540-84-1	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
2-Butanone	78-93-3	ug/m3	76000		< 1.7 U	**3.8**	**24**	**12**	**16**	**20**	**24**
2-Hexanone	591-78-6	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
4-Methyl-2-Pentanone	108-10-1	ug/m3	46000		< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Acetone	67-64-1	ug/m3			**10**	**13**	**620**	**170**	**700**	**540**	**600**
Acetonitrile	75-05-8	ug/m3	910		< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Benzene	71-43-2	ug/m3	11		< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Bromodichloromethane	75-27-4	ug/m3	2.3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Bromoform	75-25-2	ug/m3	76		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Carbon Disulfide	75-15-0	ug/m3	11000		< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U
Carbon Tetrachloride	56-23-5	ug/m3	14		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Chlorobenzene	108-90-7	ug/m3	760		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Chloroethane	75-00-3	ug/m3	150000		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Chloroform	67-66-3	ug/m3	3.6		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Chloromethane	74-87-3	ug/m3	1400		**1.7**	**10**	**1.7**	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
cis-1,2-Dichloroethene (DCE)	156-59-2	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Cis-1,3-Dichloropropene	10061-01-5	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Cyclohexane	110-82-7	ug/m3			< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Dibromochloromethane	124-48-1	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Dichlorodifluoromethane	75-71-8	ug/m3	1500		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	**2**	< 1.7 U	**1.8**
Ethanol	64-17-5	ug/m3			< 8.5 U	< 8.5 U	**16**	< 8.5 U	**11**	< 8.5 U	< 8.5 U
Ethylbenzene	100-41-4	ug/m3	15000		< 1.7 U	**2.5**	**2.3**	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Freon 113	76-13-1	ug/m3	76000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Hexachlorobutadiene	87-68-3	ug/m3	3.8		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Hexane	110-54-3	ug/m3	11000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	ug/m3			< 3.5 U	< 3.5 U	**460**	**230**	**1300**	**520**	**280**
Isopropylbenzene	98-82-8	ug/m3	6100		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
m,p-Xylene	179601-23-1	ug/m3	1500		< 3.5 U	**12**	**11**	**3.9**	< 3.5 U	**4.1**	**5.3**

Table 3. Shallow Soil Gas Sampling Results - May 2019

Project No. 130088, Cedar Hills Regional Landfill, King County, Washington

			Sample Location Sample Date Sample Code	GP-16A 5/29/2019 GP16S190529-	GP-18A 5/28/2019 GP18S190528-	GP-19A 5/28/2019 GP19S190528-	GP-20A 5/29/2019 GP20S190529-	GP-56 5/28/2019 GP56S190528-	GP-60 5/28/2019 GP60S190528-	GP-62 5/28/2019 GP62S190528-
Analyte	CAS	Unit	MTCA Method B - Shallow Soil Gas Screening Level							
Methyl Tert-Butylether	1634-04-4	ug/m3	320	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Methylene Chloride	75-09-2	ug/m3	8300	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Naphthalene	91-20-3	ug/m3	2.5	< 1.7 U	**0.67 J**	**1 J**	< 1.7 U	< 1.7 U	< 1.7 U	**1.5 J**
N-Heptane	142-82-5	ug/m3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Octane	111-65-9	ug/m3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
o-Xylene	95-47-6	ug/m3	1500	< 1.8 U	**6**	**5.2**	< 1.8 U	< 1.8 U	< 1.8 U	**2.1**
Styrene	100-42-5	ug/m3	15000	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Tetrachloroethene (PCE)	127-18-4	ug/m3	320	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	**9.7**
Tetrahydrofuran	109-99-9	ug/m3		< 1.8 U	**5.7**	**5**	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Toluene	108-88-3	ug/m3	76000	< 1.8 U	**7.2**	**9**	**3**	**3.2**	**4.5**	**5.6**
Trans-1,2-Dichloroethene	156-60-5	ug/m3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Trans-1,3-Dichloropropene	10061-02-6	ug/m3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Trichloroethene (TCE)	79-01-6	ug/m3	12	< 1.8 U	**2.2**	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Trichlorofluoromethane	75-69-4	ug/m3	11000	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Vinyl Chloride	75-01-4	ug/m3	9.4	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U

Notes:

Bold - Analyte Detected

Orange Shaded - Detected result exceeded screening level

U - Analyte not detected at or above Reporting Limit (RL) shown

J - Result value estimated

Table 4. Deep Soil Gas Sampling Results - May 2019

Project No. 130088, Cedar Hill Regional Landfill, King County, Washington

Analyte	CAS	Unit	MTCA Method B - Deep Soil Gas Screening Level	Sample Location Sample Date Sample Code	EB-6D 5/28/2019 GB6-190528-	GP-16C 5/29/2019 GP16D190529-	GP-18C 5/28/2019 GP18D190528-	GP-19C 5/28/2019 GP19D190528-	GP-20C 5/28/2019 GP20D190528-	GP-63B 5/29/2019 GP63M190529-	GP-63C 5/29/2019 GP63D190529-	GP-64C 5/29/2019 GP64D190529-	GP-8 5/28/2019 GG8-190528-	MW-102 5/28/2019 G102190528-
1,1,1-Trichloroethane	71-55-6	ug/m3	230000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/m3	4.3		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,1,2-Trichloroethane	79-00-5	ug/m3	9.1		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,1-Dichloroethane	75-34-3	ug/m3	160		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	**16**
1,1-Dichloroethene	75-35-4	ug/m3	9100		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2,4-Trichlorobenzene	120-82-1	ug/m3	91		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2,4-Trimethylbenzene	95-63-6	ug/m3	2700		**2**	< 1.8 U	< 1.8 U	**1.9**	**1.9**	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dibromo-3-Chloropropane	96-12-8	ug/m3			< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,2-Dibromoethane (EDB)	106-93-4	ug/m3	0.42		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/m3	9100		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichloroethane (EDC)	107-06-2	ug/m3	9.6		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichloropropane	78-87-5	ug/m3	68		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorotetrafluoroethane;Fluorocarbon 114	76-14-2	ug/m3			**2.5**	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3,5-Trimethylbenzene	108-67-8	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,3-Butadiene	106-99-0	ug/m3	8.3		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/m3			**37**	**210**	**210**	**28**	**49**	**180**	**200**	**140**	**210**	**35**
1,4-Dichlorobenzene	106-46-7	ug/m3	23		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,4-Dioxane	123-91-1	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
2,2,4-Trimethylpentane	540-84-1	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
2-Butanone	78-93-3	ug/m3	230000		**3**	**27**	**17**	**3.2**	**2.5**	**9**	**7.3**	**11**	**31**	**2.2**
2-Hexanone	591-78-6	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
4-Methyl-2-Pentanone	108-10-1	ug/m3	140000		< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Acetone	67-64-1	ug/m3			**16**	**140**	**230**	**11**	**11**	**410**	**280**	**360**	**320**	**15**
Acetonitrile	75-05-8	ug/m3	2700		< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Benzene	71-43-2	ug/m3	32		< 3.5 U	**3.9**	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	**6.3**	< 3.5 U
Bromodichloromethane	75-27-4	ug/m3	6.8		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Bromoform	75-25-2	ug/m3	230		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Carbon Disulfide	75-15-0	ug/m3	32000		< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U	< 9.0 U
Carbon Tetrachloride	56-23-5	ug/m3	42		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Chlorobenzene	108-90-7	ug/m3	2300		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Chloroethane	75-00-3	ug/m3	460000		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Chloroform	67-66-3	ug/m3	11		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Chloromethane	74-87-3	ug/m3	4100		< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	**2.1**	< 1.7 U	**1.9**	< 1.7 U	**2**
cis-1,2-Dichloroethene (DCE)	156-59-2	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	**31**
Cis-1,3-Dichloropropene	10061-01-5	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Cyclohexane	110-82-7	ug/m3			< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Dibromochloromethane	124-48-1	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Dichlorodifluoromethane	75-71-8	ug/m3	4600		**4.2**	**2.4**	**2.7**	< 1.7 U	< 1.7 U	< 1.7 U	**2**	< 1.7 U	**2.6**	**3.9**
Ethanol	64-17-5	ug/m3			< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U	< 8.5 U
Ethylbenzene	100-41-4	ug/m3	46000		**2**	< 1.7 U	< 1.7 U	**2.4**	**2.7**	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Freon 113	76-13-1	ug/m3	230000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Hexachlorobutadiene	87-68-3	ug/m3	11		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Hexane	110-54-3	ug/m3	32000		**1.9**	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	ug/m3			< 3.5 U	**230**	**510**	< 3.5 U	< 3.5 U	**130**	**230**	**280**	**180**	**3.7**
Isopropylbenzene	98-82-8	ug/m3	18000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
m,p-Xylene	179601-23-1	ug/m3			**9.9**	**4.4**	**7.4**	**11**	**13**	**4.5**	**4.6**	**3.7**	**4.7**	**8.1**
Methyl Tert-Butylether	1634-04-4	ug/m3	960		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Methylene Chloride	75-09-2	ug/m3	25000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Naphthalene	91-20-3	ug/m3	7.4		**0.88 J**	< 1.7 U	**0.87 J**	**0.63 J**	**0.89 J**	< 1.7 U	< 1.7 U	< 1.7 U	**0.71 J**	< 1.7 U
N-Heptane	142-82-5	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Octane	111-65-9	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
o-Xylene	95-47-6	ug/m3	4600		**5.4**	**1.9**	**3.2**	**5.6**	**6.3**	**1.9**	**1.9**	< 1.8 U	< 1.8 U	**4.2**
Styrene	100-42-5	ug/m3	46000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Tetrachloroethene (PCE)	127-18-4	ug/m3	960		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Tetrahydrofuran	109-99-9	ug/m3			**7.2**	< 1.8 U	**2**	**6.6**	**4.3**	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	**5.5**
Toluene	108-88-3	ug/m3	230000		**6.5**	**3**	**6.5**	**7.3**	**8.2**	**3.6**	**3.6**	**3.6**	**4.1**	**5**
Trans-1,2-Dichloroethene	156-60-5	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	**1.9**
Trans-1,3-Dichloropropene	10061-02-6	ug/m3			< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Trichloroethene (TCE)	79-01-6	ug/m3	37		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Trichlorofluoromethane	75-69-4	ug/m3	32000		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Vinyl Chloride	75-01-4	ug/m3	28		< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	**3.1**

Notes:

Bold - Analyte Detected

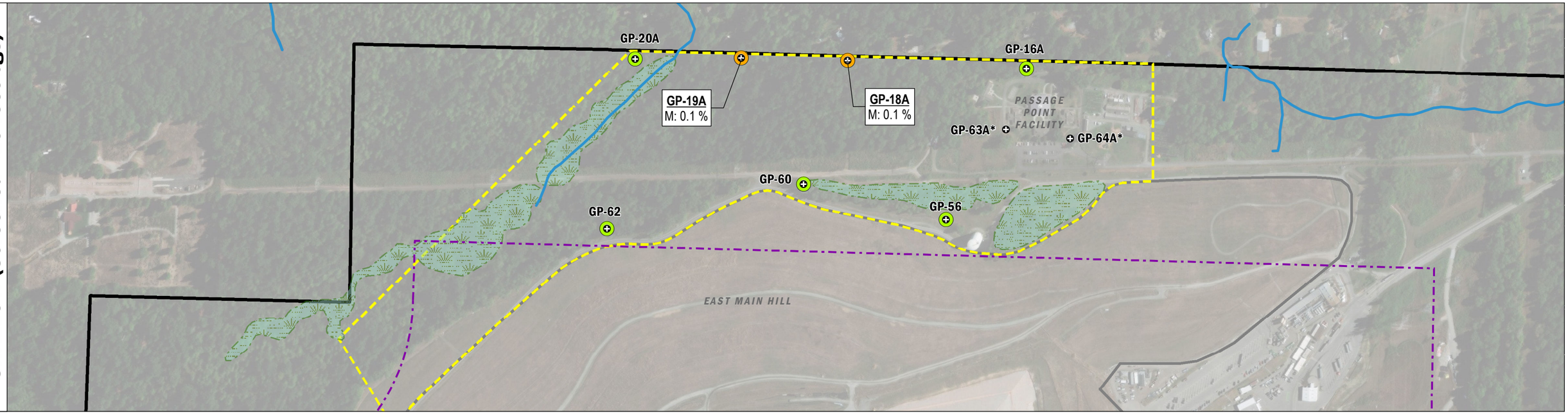
Orange Shaded - Detected result exceeded screening level

U - Analyte not detected at or above Reporting Limit (RL) shown

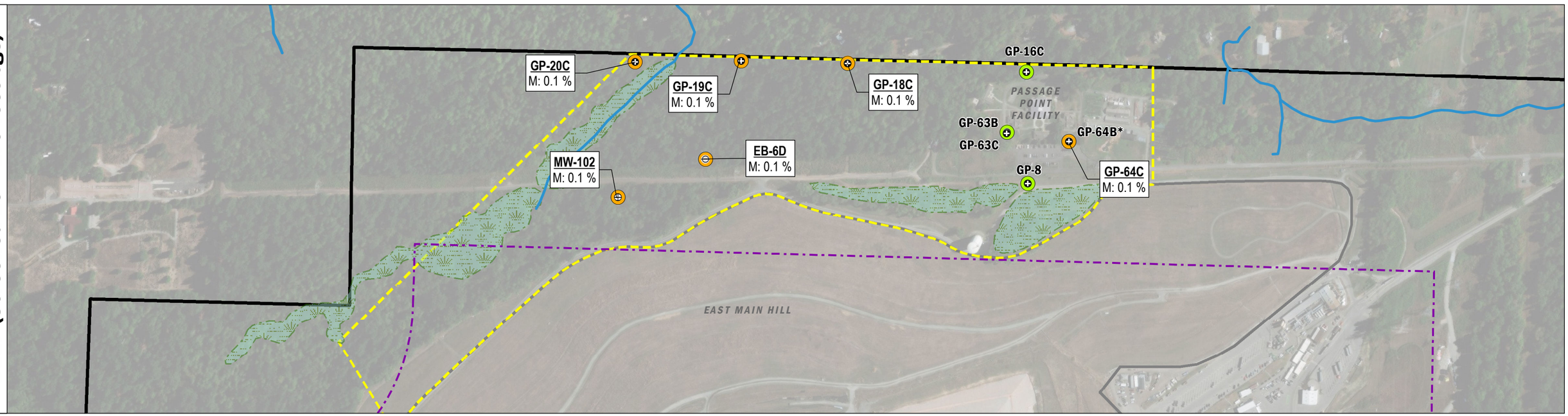
J - Result value estimated

FIGURES

SHALLOW (Screened <15 feet bgs)



DEEP (Screened 15 – 179 feet bgs)



Methane Results (February, 2019)

- >5% Methane
- 0-5% Methane
- Methane Not Detected

- Gas Probe
- Perched Zone Monitoring Well
- Perched Zone Piezometer
- Permitted Landfill Buffer

Note: *See Table 2 for a summary of landfill gas readings at the time of sample collection.*
** GP-63A, GP-64A, and GP-64B were not sampled due to the screen being fully submerged with water.*

- Approximate Extent of Wetland Areas
- Project Location
- Landfill Cover Limits
- Property Boundary

0 500 1,000
Feet

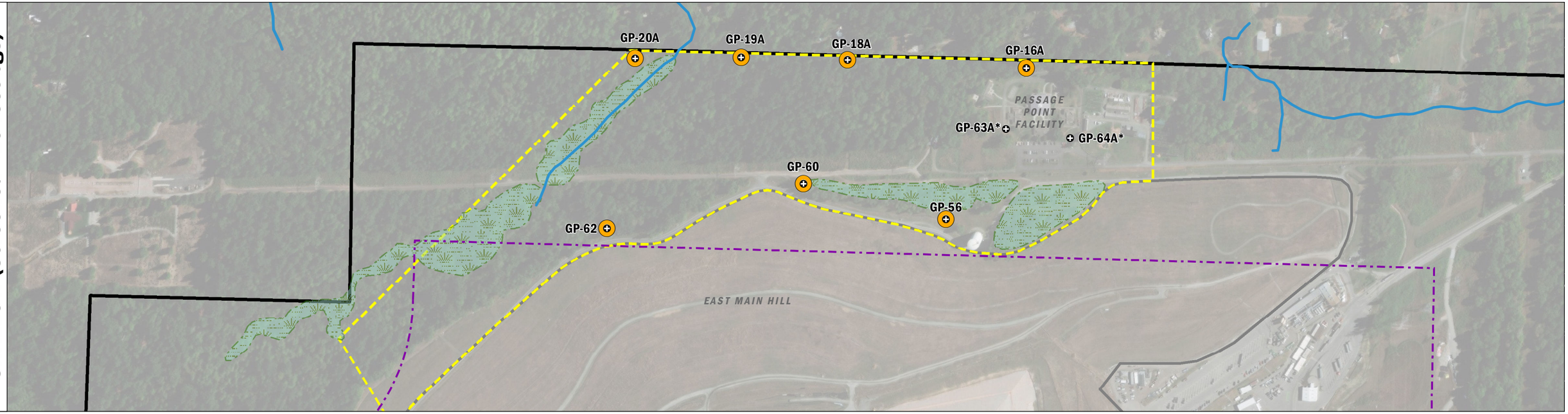
King County | Aspect CONSULTING

Methane Results - May 2019

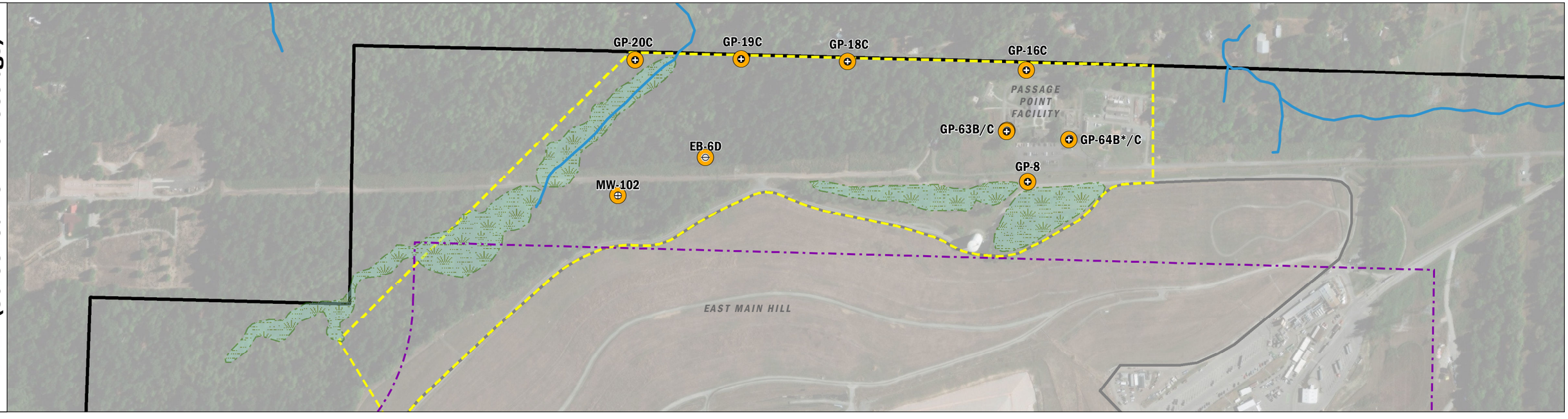
Cedar Hills Regional Landfill
King County, Washington

DATE: Aug-2019	PROJECT NO. 130088
DESIGNED BY: PPW	
DRAWN BY: PPW	FIGURE NO. 1
REVISED BY: TDR	

SHALLOW (Screened <15 feet bgs)



DEEP (Screened 15- 179 feet bgs)



Soil Gas Sampling Results (May 2019)

- One or More Analytes Detected Above Screening Level
- One or More Analytes Detected, No Screening Level Exceedances
- No Detections

- Gas Probe
- Perched Zone Monitoring Well
- Perched Zone Piezometer
- Permitted Landfill Buffer

Note: *See Table 3 and Table 4 for full analytical results.*
**GP-63A, GP-64A, and GP-64B were not sampled due to the screen being fully submerged with water.*

- Approximate Extent of Wetland Areas
- Project Location
- Landfill Cover Limits
- Property Boundary

N

0 500 1,000
Feet

King County | Aspect Consulting

TO-17 Results – May 2019

Cedar Hills Regional Landfill
King County, Washington

DATE: Jul-2019	PROJECT NO. 130088
DESIGNED BY: PPW	
DRAWN BY: PPW	FIGURE NO. 2
REVISED BY: TDR	

APPENDIX A

Analytical Lab Report

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

June 17, 2019

Kirsi Longley
Aspect Consulting
710 2nd Ave. Suite 550
Seattle, WA 98104

RE: Cedar Hills Regional Landfill / 130088

Dear Kirsi:

Enclosed are the results of the samples submitted to our laboratory on May 31, 2019. For your reference, these analyses have been assigned our service request number P1903136.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 4:48 pm, Jun 17, 2019

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: Aspect Consulting
Project: Cedar Hills Regional Landfill / 130088

Service Request No: P1903136

CASE NARRATIVE

The samples were received intact under chain of custody on May 31, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

The analysis for sample GP20S190528- (P1903136-001) was cancelled per client e-mail instructions.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with the methodology outlined in EPA Method TO-17. This procedure is described in laboratory SOP VOA-TO17. The analyses were performed by thermal desorption/gas chromatography/mass spectrometry. This analysis is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

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Simi Valley, CA 93065
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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Aspect Consulting Service Request: P1903136
Project ID: Cedar Hills Regional Landfill / 130088

Date Received: 5/31/2019
Time Received: 09:10

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-17 - VOC Sorbent
GP20D190528-	P1903136-002	Air	5/28/2019	10:04	X
GP19S190528-	P1903136-003	Air	5/28/2019	10:29	X
GP19D190528-	P1903136-004	Air	5/28/2019	10:40	X
GP18S190528-	P1903136-005	Air	5/28/2019	11:02	X
GP18D190528-	P1903136-006	Air	5/28/2019	11:14	X
GB6-190528-	P1903136-007	Air	5/28/2019	12:26	X
G102190528-	P1903136-008	Air	5/28/2019	13:14	X
GP62S190528-	P1903136-009	Air	5/28/2019	13:42	X
GP60S190528-	P1903136-010	Air	5/28/2019	14:04	X
GP56S190528-	P1903136-011	Air	5/28/2019	14:33	X
GG8-190528-	P1903136-012	Air	5/28/2019	15:27	X
GP20S190529-	P1903136-013	Air	5/29/2019	09:13	X
GP64D190529-	P1903136-014	Air	5/29/2019	09:55	X
GP63M190529-	P1903136-015	Air	5/29/2019	10:42	X
GP63D190529-	P1903136-016	Air	5/29/2019	10:56	X
GP16S190529-	P1903136-017	Air	5/29/2019	11:21	X
GP16D190529-	P1903136-018	Air	5/29/2019	11:34	X
UTRP190529-	P1903136-019	Air	5/29/2019	00:00	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. 1903136

Company Name & Address (Reporting Information)	Aspect Consulting 710 2nd Avenue, Suite 550 Seattle, WA 98104
Project Name	Cedar Hills Regional Landfill
Project Number	130088
Project Manager	Kirsi Longley
P.O. # / Billing Information	
Phone	206-812-4746
Fax	
Email Address for Result Reporting	klongley@aspectconsulting.com
Sampler (Print & Sign)	Amelia C. Oates
ALS Contact:	Sue Anderson

Client Sample ID	Laboratory ID Number	Date Collected	~~Time Collected~~	Tube ID	Sampling Pump Flow (mL/min)	Sampling Start Time	Sampling End Time	(mL) Sample Volume	Analysis Method: TO-15		Comments e.g. Actual Preservative or specific instructions
GP20S190528-	1	5/28/19		1109547	100	0930	0936	600			
GP20D190528-	2	"		1124822	"	0958	1004	"	X		
GP19S190528-	3	"		1110233	"	1023	1029	"	X		
GP19D190528-	4	"		1110891	"	1034	1040	"	X		
GP18S190528-	5	"		1059792	"	1056	1102	"	X		
GP18D190528-	6	"		1124996	"	1108	1114	"	X		
GB6-190528-	7	"		1064865	"	1220	1226	"	X		
G102-190528-	8	"		1110439	"	1308	1314	"	X		
GP62S-190528-	9	"		1110295	"	1336	1342	"	X		
GP60S-190528-	10	"		1125722	"	1358	1404	"	X		
GP56S-190528-	11	"		1124163	"	1427	1433	"	X		
GG8-190528-	12	"		1110244	"	1521	1527	"	X		
GP20S190529-	13	5/29/19		1112369	"	0907	0913	"	X		
GP64D-190529-	14	"		1124869	"	0949	0955	"	X		

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 5/30/19	Time: 1300	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 5/31/19	Time: 0910

Cooler / Blank Temperature 10 °C

GEL

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. R1903186

Company Name & Address (Reporting Information)
Aspect Consulting
710 2nd Avenue, Suite 550
Seattle, WA 98104

Project Name: Cedar Hills Regional Landfill
Project Number: 130088
P.O. # / Billing Information

ALS Contact: Sue Anderson

Project Manager: Kirsi Longley
Phone: 206-812-4746
Fax:
Email Address for Result Reporting: klongley@aspectconsulting.com
Sampler (Print & Sign): Amelia C. Oates

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Tube ID	Sampling Pump Flow (mL/min)	Sampling Start Time	Sampling End Time	Sample Volume (mL)	Analysis Method: TO-17		Comments e.g. Actual Preservative or specific instructions
GP63M-190529-	15	5/29/19		1060860	100mL/min	1036	1042	600	X		
GP63D-190529-	16	"		1064294	"	1050	1056	"	X		
GP16S-190529-	17	"		172445	"	1115	421	"	X		
GP16D-190529-	18	"		377894	"	1128	1134	"	X		
UTRP-190529-	19	5/29/19		1052973	N/A	N/A	N/A	N/A	X		

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Amelia C. Oates	5/30/19	1300			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Aspect Consulting Work order: P1903136

Project: Cedar Hills Regional Landfill / 130088

Sample(s) received on: 5/31/19 Date opened: 5/31/19 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☒	☐
	Cooler Temperature: 10° C Blank Temperature: ° C Thermometer ID T-111 Gel Pa			
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☒	☐	☐
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1903136-001.01	Tube, TD					
P1903136-002.01	Tube, TD					
P1903136-003.01	Tube, TD					
P1903136-004.01	Tube, TD					
P1903136-005.01	Tube, TD					
P1903136-006.01	Tube, TD					
P1903136-007.01	Tube, TD					
P1903136-008.01	Tube, TD					
P1903136-009.01	Tube, TD					
P1903136-010.01	Tube, TD					
P1903136-011.01	Tube, TD					
P1903136-012.01	Tube, TD					
P1903136-013.01	Tube, TD					
P1903136-014.01	Tube, TD					
P1903136-015.01	Tube, TD					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: Aspect Consulting   Work order: P1903136

Project: Cedar Hills Regional Landfill / 130088

Sample(s) received on: 5/31/19   Date opened: 5/31/19   by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1903136-016.01	Tube, TD					
P1903136-017.01	Tube, TD					
P1903136-018.01	Tube, TD					
P1903136-019.01	Tube, TD					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20D190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-002

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	6.7	**11**	9.0	**4.7**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	3.5	ND	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	1.5	**2.5**	1.7	**0.85**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	2.6	**4.3**	1.8	**1.5**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20D190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-002

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	4.9	**8.2**	1.8	**2.2**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	1.6	**2.7**	1.7	**0.61**	0.38	
179601-23-1	m,p-Xylenes	7.8	**13**	3.5	**3.0**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	3.8	**6.3**	1.8	**1.4**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	1.2	**1.9**	1.8	**0.40**	0.37	
541-73-1	1,3-Dichlorobenzene	29	**49**	1.8	**8.2**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19S190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-003

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	1.0	**1.7**	1.7	**0.82**	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	9.8	**16**	8.5	**8.7**	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	370	**620**	9.0	**260**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	280	**460**	3.5	**190**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	15	**24**	1.7	**8.3**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	3.0	**5.0**	1.8	**1.7**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19S190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-003

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	5.4	**9.0**	1.8	**2.4**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	1.4	**2.3**	1.7	**0.53**	0.38	
179601-23-1	m,p-Xylenes	6.5	**11**	3.5	**2.5**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	3.1	**5.2**	1.8	**1.2**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	1.1	**1.9**	1.8	**0.39**	0.37	
541-73-1	1,3-Dichlorobenzene	44	**73**	1.8	**12**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19D190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-004

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	6.8	**11**	9.0	**4.7**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	3.5	ND	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	1.9	**3.2**	1.7	**1.1**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	3.9	**6.6**	1.8	**2.2**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19D190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-004

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	4.4	**7.3**	1.8	**1.9**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	1.4	**2.4**	1.7	**0.56**	0.38	
179601-23-1	m,p-Xylenes	6.6	**11**	3.5	**2.6**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	3.4	**5.6**	1.8	**1.3**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	1.1	**1.9**	1.8	**0.38**	0.37	
541-73-1	1,3-Dichlorobenzene	17	**28**	1.8	**4.7**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP18S190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-005

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	6.1	**10**	1.7	**4.9**	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	7.8	**13**	9.0	**5.5**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	3.5	ND	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	2.3	**3.8**	1.7	**1.3**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	3.4	**5.7**	1.8	**1.9**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP18S190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-005

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	1.3	**2.2**	1.8	**0.41**	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	4.3	**7.2**	1.8	**1.9**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	1.5	**2.5**	1.7	**0.57**	0.38	
179601-23-1	m,p-Xylenes	7.2	**12**	3.5	**2.8**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	3.6	**6.0**	1.8	**1.4**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	1.3	**2.1**	1.8	**0.43**	0.37	
541-73-1	1,3-Dichlorobenzene	13	**21**	1.8	**3.5**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP18D190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-006

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.6	**2.7**	1.7	**0.54**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	140	**230**	9.0	**95**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	300	**510**	3.5	**210**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	10	**17**	1.7	**5.8**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	1.2	**2.0**	1.8	**0.67**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP18D190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-006

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	3.9	**6.5**	1.8	**1.7**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	4.4	**7.4**	3.5	**1.7**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	1.9	**3.2**	1.8	**0.73**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	120	**210**	1.8	**34**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GB6-190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-007

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	2.5	**4.2**	1.7	**0.86**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	1.5	**2.5**	1.7	**0.36**	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	9.8	**16**	9.0	**6.9**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	3.5	ND	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	1.8	**3.0**	1.7	**1.0**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	1.2	**1.9**	1.8	**0.55**	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	4.3	**7.2**	1.8	**2.5**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**

Client Sample ID: **GB6-190528-** ALS Project ID: P1903136

Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-007

Test Code: EPA TO-17 Date Collected: 5/28/19

Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19

Analyst: Chris Parnell Date Analyzed: 6/4/19

Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)

Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	3.9	**6.5**	1.8	**1.7**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	1.2	**2.0**	1.7	**0.47**	0.38	
179601-23-1	m,p-Xylenes	6.0	**9.9**	3.5	**2.3**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	3.2	**5.4**	1.8	**1.2**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	1.2	**2.0**	1.8	**0.41**	0.37	
541-73-1	1,3-Dichlorobenzene	22	**37**	1.8	**6.2**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **G102190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-008

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	2.3	**3.9**	1.7	**0.78**	0.34	
74-87-3	Chloromethane	1.2	**2.0**	1.7	**0.99**	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	1.8	**3.1**	1.8	**1.2**	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	9.1	**15**	9.0	**6.4**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	2.2	**3.7**	3.5	**1.5**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	1.1	**1.9**	1.8	**0.47**	0.46	
75-34-3	1,1-Dichloroethane	9.6	**16**	1.7	**3.9**	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	1.3	**2.2**	1.7	**0.73**	0.57	
156-59-2	cis-1,2-Dichloroethene	18	**31**	1.8	**7.7**	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	3.3	**5.5**	1.8	**1.8**	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **G102190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-008

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	3.0	**5.0**	1.8	**1.3**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	4.8	**8.1**	3.5	**1.9**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	2.5	**4.2**	1.8	**0.96**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	21	**35**	1.8	**5.8**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP62S190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-009

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.1	**1.8**	1.7	**0.37**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	360	**600**	9.0	**250**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	170	**280**	3.5	**110**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	14	**24**	1.7	**8.1**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP62S190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-009

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	3.4	**5.6**	1.8	**1.5**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	5.8	**9.7**	1.8	**1.4**	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	3.2	**5.3**	3.5	**1.2**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	1.3	**2.1**	1.8	**0.49**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	130	**220**	1.8	**37**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP60S190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-010

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	6.8	**11**	8.5	**6.0**	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	320	**540**	9.0	**230**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	310	**520**	3.5	**210**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	12	**20**	1.7	**6.8**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP60S190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-010

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	2.7	**4.5**	1.8	**1.2**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.5	**4.1**	3.5	**0.95**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	< 1.1	ND	1.8	ND	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	110	**190**	1.8	**31**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP56S190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-011

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.2	**2.0**	1.7	**0.40**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	420	**700**	9.0	**290**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	790	**1,300**	3.5	**540**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	9.5	**16**	1.7	**5.4**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP56S190528-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-011

Test Code: EPA TO-17 Date Collected: 5/28/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	1.9	**3.2**	1.8	**0.84**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	< 2.1	ND	3.5	ND	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	< 1.1	ND	1.8	ND	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	75	**120**	1.8	**21**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GG8-190528-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-012

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/28/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.5	**2.6**	1.7	**0.52**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	190	**320**	9.0	**140**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	110	**180**	3.5	**73**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	19	**31**	1.7	**11**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	3.8	**6.3**	3.5	**2.0**	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**

Client Sample ID: **GG8-190528-** ALS Project ID: P1903136

Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-012

Test Code: EPA TO-17 Date Collected: 5/28/19

Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19

Analyst: Chris Parnell Date Analyzed: 6/4/19

Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)

Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	2.5	**4.1**	1.8	**1.1**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.8	**4.7**	3.5	**1.1**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	< 1.1	ND	1.8	ND	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	130	**210**	1.8	**35**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20S190529-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-013

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/29/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	99	**170**	9.0	**70**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	140	**230**	3.5	**94**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	7.0	**12**	1.7	**4.0**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20S190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-013

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	1.8	**3.0**	1.8	**0.80**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.3	**3.9**	3.5	**0.90**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	< 1.1	ND	1.8	ND	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	100	**170**	1.8	**28**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP64D190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-014

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	1.2	**1.9**	1.7	**0.94**	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	220	**360**	9.0	**150**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	170	**280**	3.5	**110**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	6.4	**11**	1.7	**3.6**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP64D190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-014

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	2.1	**3.6**	1.8	**0.94**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.2	**3.7**	3.5	**0.85**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	< 1.1	ND	1.8	ND	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	84	**140**	1.8	**23**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63M190529-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-015

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/29/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	1.2	**2.1**	1.7	**1.0**	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	250	**410**	9.0	**170**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	79	**130**	3.5	**54**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	5.4	**9.0**	1.7	**3.0**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63M190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-015

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	2.2	**3.6**	1.8	**0.97**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.7	**4.5**	3.5	**1.0**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	1.1	**1.9**	1.8	**0.43**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	110	**180**	1.8	**30**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63D190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-016

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/5/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.2	**2.0**	1.7	**0.40**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	170	**280**	9.0	**120**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	140	**230**	3.5	**92**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	4.4	**7.3**	1.7	**2.5**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63D190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-016

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/5/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	2.1	**3.6**	1.8	**0.95**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.7	**4.6**	3.5	**1.0**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	1.2	**1.9**	1.8	**0.45**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	120	**200**	1.8	**33**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16S190529-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-017

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/29/19
Date Received: 5/31/19
Date Analyzed: 6/5/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	1.7	ND	0.34	
74-87-3	Chloromethane	1.0	**1.7**	1.7	**0.83**	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	6.3	**10**	9.0	**4.4**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	3.5	ND	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	< 1.0	ND	1.7	ND	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	< 2.1	ND	3.5	ND	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16S190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-017

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/5/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	< 1.1	ND	1.8	ND	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	< 2.1	ND	3.5	ND	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	< 1.1	ND	1.8	ND	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	2.5	**4.2**	1.8	**0.70**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16D190529-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-018

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/29/19
Date Received: 5/31/19
Date Analyzed: 6/5/19
Volume(s) Analyzed: 0.600 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.4	**2.4**	1.7	**0.49**	0.34	
74-87-3	Chloromethane	< 1.0	ND	1.7	ND	0.81	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	1.7	ND	0.24	
75-01-4	Vinyl Chloride	< 1.1	ND	1.8	ND	0.72	
106-99-0	1,3-Butadiene	< 1.0	ND	1.7	ND	0.75	
75-00-3	Chloroethane	< 1.0	ND	1.7	ND	0.63	
64-17-5	Ethanol	< 5.1	ND	8.5	ND	4.5	
75-05-8	Acetonitrile	< 2.1	ND	3.5	ND	2.1	
67-64-1	Acetone	85	**140**	9.0	**60**	3.8	
75-69-4	Trichlorofluoromethane	< 1.1	ND	1.8	ND	0.33	
67-63-0	2-Propanol (Isopropyl Alcohol)	140	**230**	3.5	**93**	1.4	
75-35-4	1,1-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-09-2	Methylene Chloride	< 1.1	ND	1.8	ND	0.53	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	1.8	ND	0.24	
75-15-0	Carbon Disulfide	< 5.4	ND	9.0	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
75-34-3	1,1-Dichloroethane	< 1.0	ND	1.7	ND	0.41	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	1.8	ND	0.51	
78-93-3	2-Butanone (MEK)	16	**27**	1.7	**9.3**	0.57	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	1.8	ND	0.46	
110-54-3	n-Hexane	< 1.1	ND	1.8	ND	0.52	
67-66-3	Chloroform	< 1.1	ND	1.8	ND	0.38	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	1.8	ND	0.62	
107-06-2	1,2-Dichloroethane	< 1.1	ND	1.8	ND	0.45	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
71-43-2	Benzene	2.3	**3.9**	3.5	**1.2**	1.1	
56-23-5	Carbon Tetrachloride	< 1.0	ND	1.7	ND	0.27	
110-82-7	Cyclohexane	< 2.1	ND	3.5	ND	1.0	
78-87-5	1,2-Dichloropropane	< 1.1	ND	1.8	ND	0.40	
75-27-4	Bromodichloromethane	< 1.1	ND	1.8	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16D190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-018

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/5/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.600 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	1.8	ND	0.34	
123-91-1	1,4-Dioxane	< 1.1	ND	1.8	ND	0.51	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	1.8	ND	0.39	
142-82-5	n-Heptane	< 1.1	ND	1.8	ND	0.45	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	3.5	ND	0.85	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	1.8	ND	0.40	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	1.8	ND	0.34	
108-88-3	Toluene	1.8	**3.0**	1.8	**0.81**	0.49	
591-78-6	2-Hexanone	< 1.1	ND	1.8	ND	0.45	
124-48-1	Dibromochloromethane	< 1.1	ND	1.8	ND	0.22	
106-93-4	1,2-Dibromoethane	< 1.1	ND	1.8	ND	0.24	
111-65-9	n-Octane	< 1.1	ND	1.8	ND	0.39	
127-18-4	Tetrachloroethene	< 1.1	ND	1.8	ND	0.27	
108-90-7	Chlorobenzene	< 1.1	ND	1.8	ND	0.40	
100-41-4	Ethylbenzene	< 1.0	ND	1.7	ND	0.38	
179601-23-1	m,p-Xylenes	2.6	**4.4**	3.5	**1.0**	0.81	
75-25-2	Bromoform	< 1.1	ND	1.8	ND	0.18	
100-42-5	Styrene	< 1.1	ND	1.8	ND	0.43	
95-47-6	o-Xylene	1.1	**1.9**	1.8	**0.43**	0.42	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	1.8	ND	0.27	
98-82-8	Cumene	< 1.1	ND	1.8	ND	0.37	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	1.8	ND	0.37	
541-73-1	1,3-Dichlorobenzene	130	**210**	1.8	**35**	0.31	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	1.8	ND	0.31	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	1.8	ND	0.25	
87-68-3	Hexachlorobutadiene	< 1.1	ND	1.8	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **UTRP190529-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1903136
ALS Sample ID: P1903136-019

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 5/29/19
Date Received: 5/31/19
Date Analyzed: 6/4/19
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	NA	NA	NA	NA	
74-87-3	Chloromethane	< 1.0	NA	NA	NA	NA	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	NA	NA	NA	NA	
75-01-4	Vinyl Chloride	< 1.1	NA	NA	NA	NA	
106-99-0	1,3-Butadiene	< 1.0	NA	NA	NA	NA	
75-00-3	Chloroethane	< 1.0	NA	NA	NA	NA	
64-17-5	Ethanol	< 5.1	NA	NA	NA	NA	
75-05-8	Acetonitrile	< 2.1	NA	NA	NA	NA	
67-64-1	Acetone	6.5	NA	NA	NA	NA	
75-69-4	Trichlorofluoromethane	< 1.1	NA	NA	NA	NA	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	NA	NA	NA	NA	
75-35-4	1,1-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-09-2	Methylene Chloride	< 1.1	NA	NA	NA	NA	
76-13-1	Trichlorotrifluoroethane	< 1.1	NA	NA	NA	NA	
75-15-0	Carbon Disulfide	< 5.4	NA	NA	NA	NA	
156-60-5	trans-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-34-3	1,1-Dichloroethane	< 1.0	NA	NA	NA	NA	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	NA	NA	NA	NA	
78-93-3	2-Butanone (MEK)	< 1.0	NA	NA	NA	NA	
156-59-2	cis-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
110-54-3	n-Hexane	< 1.1	NA	NA	NA	NA	
67-66-3	Chloroform	< 1.1	NA	NA	NA	NA	
109-99-9	Tetrahydrofuran (THF)	< 1.1	NA	NA	NA	NA	
107-06-2	1,2-Dichloroethane	< 1.1	NA	NA	NA	NA	
71-55-6	1,1,1-Trichloroethane	< 1.1	NA	NA	NA	NA	
71-43-2	Benzene	< 2.1	NA	NA	NA	NA	
56-23-5	Carbon Tetrachloride	< 1.0	NA	NA	NA	NA	
110-82-7	Cyclohexane	< 2.1	NA	NA	NA	NA	
78-87-5	1,2-Dichloropropane	< 1.1	NA	NA	NA	NA	
75-27-4	Bromodichloromethane	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **UTRP190529-** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1903136-019

Test Code: EPA TO-17 Date Collected: 5/29/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 5/31/19
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	NA	NA	NA	NA	
123-91-1	1,4-Dioxane	< 1.1	NA	NA	NA	NA	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	NA	NA	NA	NA	
142-82-5	n-Heptane	< 1.1	NA	NA	NA	NA	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
108-10-1	4-Methyl-2-pentanone	< 2.1	NA	NA	NA	NA	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
79-00-5	1,1,2-Trichloroethane	< 1.1	NA	NA	NA	NA	
108-88-3	Toluene	< 1.1	NA	NA	NA	NA	
591-78-6	2-Hexanone	< 1.1	NA	NA	NA	NA	
124-48-1	Dibromochloromethane	< 1.1	NA	NA	NA	NA	
106-93-4	1,2-Dibromoethane	< 1.1	NA	NA	NA	NA	
111-65-9	n-Octane	< 1.1	NA	NA	NA	NA	
127-18-4	Tetrachloroethene	< 1.1	NA	NA	NA	NA	
108-90-7	Chlorobenzene	< 1.1	NA	NA	NA	NA	
100-41-4	Ethylbenzene	< 1.0	NA	NA	NA	NA	
179601-23-1	m,p-Xylenes	< 2.1	NA	NA	NA	NA	
75-25-2	Bromoform	< 1.1	NA	NA	NA	NA	
100-42-5	Styrene	< 1.1	NA	NA	NA	NA	
95-47-6	o-Xylene	< 1.1	NA	NA	NA	NA	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	NA	NA	NA	NA	
98-82-8	Cumene	< 1.1	NA	NA	NA	NA	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
541-73-1	1,3-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
106-46-7	1,4-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
95-50-1	1,2-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	NA	NA	NA	NA	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	NA	NA	NA	NA	
87-68-3	Hexachlorobutadiene	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Project ID: P1903136

Naphthalene

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date(s) Collected: 5/28 - 5/29/19
Analyst: Chris Parnell Date Received: 5/31/19
Sampling Media: TD Carbo 300 Sorbent Tube(s) Date Analyzed: 6/4 - 6/5/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume Liter(s)	Result ng/Sample	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
GP20D190528-	P1903136-002	0.600	**0.54**	**0.89**	1.7	0.62	**0.17**	0.32	0.12	**J**
GP19S190528-	P1903136-003	0.600	**0.61**	**1.0**	1.7	0.62	**0.19**	0.32	0.12	**J**
GP19D190528-	P1903136-004	0.600	**0.38**	**0.63**	1.7	0.62	**0.12**	0.32	0.12	**J**
GP18S190528-	P1903136-005	0.600	**0.40**	**0.67**	1.7	0.62	**0.13**	0.32	0.12	**J**
GP18D190528-	P1903136-006	0.600	**0.52**	**0.87**	1.7	0.62	**0.17**	0.32	0.12	**J**
GB6-190528-	P1903136-007	0.600	**0.53**	**0.88**	1.7	0.62	**0.17**	0.32	0.12	**J**
G102190528-	P1903136-008	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP62S190528-	P1903136-009	0.600	**0.93**	**1.5**	1.7	0.62	**0.30**	0.32	0.12	**J**
GP60S190528-	P1903136-010	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP56S190528-	P1903136-011	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GG8-190528-	P1903136-012	0.600	**0.43**	**0.71**	1.7	0.62	**0.14**	0.32	0.12	**J**
GP20S190529-	P1903136-013	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP64D190529-	P1903136-014	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP63M190529-	P1903136-015	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP63D190529-	P1903136-016	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP16S190529-	P1903136-017	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
GP16D190529-	P1903136-018	0.600	< 0.37	ND	1.7	0.62	ND	0.32	0.12	
UTRP190529-	P1903136-019	NA	< 0.37	NA	NA	NA	NA	NA	NA	
Method Blank	P190604-MB	NA	< 0.37	NA	NA	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **Method Blank** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190604-MB

Test Code: EPA TO-17 Date Collected: NA
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA
Analyst: Chris Parnell Date Analyzed: 6/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	NA	NA	NA	NA	
74-87-3	Chloromethane	< 1.0	NA	NA	NA	NA	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	NA	NA	NA	NA	
75-01-4	Vinyl Chloride	< 1.1	NA	NA	NA	NA	
106-99-0	1,3-Butadiene	< 1.0	NA	NA	NA	NA	
75-00-3	Chloroethane	< 1.0	NA	NA	NA	NA	
64-17-5	Ethanol	< 5.1	NA	NA	NA	NA	
75-05-8	Acetonitrile	< 2.1	NA	NA	NA	NA	
67-64-1	Acetone	< 5.4	NA	NA	NA	NA	
75-69-4	Trichlorofluoromethane	< 1.1	NA	NA	NA	NA	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	NA	NA	NA	NA	
75-35-4	1,1-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-09-2	Methylene Chloride	< 1.1	NA	NA	NA	NA	
76-13-1	Trichlorotrifluoroethane	< 1.1	NA	NA	NA	NA	
75-15-0	Carbon Disulfide	< 5.4	NA	NA	NA	NA	
156-60-5	trans-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-34-3	1,1-Dichloroethane	< 1.0	NA	NA	NA	NA	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	NA	NA	NA	NA	
78-93-3	2-Butanone (MEK)	< 1.0	NA	NA	NA	NA	
156-59-2	cis-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
110-54-3	n-Hexane	< 1.1	NA	NA	NA	NA	
67-66-3	Chloroform	< 1.1	NA	NA	NA	NA	
109-99-9	Tetrahydrofuran (THF)	< 1.1	NA	NA	NA	NA	
107-06-2	1,2-Dichloroethane	< 1.1	NA	NA	NA	NA	
71-55-6	1,1,1-Trichloroethane	< 1.1	NA	NA	NA	NA	
71-43-2	Benzene	< 2.1	NA	NA	NA	NA	
56-23-5	Carbon Tetrachloride	< 1.0	NA	NA	NA	NA	
110-82-7	Cyclohexane	< 2.1	NA	NA	NA	NA	
78-87-5	1,2-Dichloropropane	< 1.1	NA	NA	NA	NA	
75-27-4	Bromodichloromethane	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Aspect Consulting**

Client Sample ID: **Method Blank** ALS Project ID: P1903136

Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190604-MB

Test Code: EPA TO-17 Date Collected: NA

Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA

Analyst: Chris Parnell Date Analyzed: 6/4/19

Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)

Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	NA	NA	NA	NA	
123-91-1	1,4-Dioxane	< 1.1	NA	NA	NA	NA	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	NA	NA	NA	NA	
142-82-5	n-Heptane	< 1.1	NA	NA	NA	NA	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
108-10-1	4-Methyl-2-pentanone	< 2.1	NA	NA	NA	NA	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
79-00-5	1,1,2-Trichloroethane	< 1.1	NA	NA	NA	NA	
108-88-3	Toluene	< 1.1	NA	NA	NA	NA	
591-78-6	2-Hexanone	< 1.1	NA	NA	NA	NA	
124-48-1	Dibromochloromethane	< 1.1	NA	NA	NA	NA	
106-93-4	1,2-Dibromoethane	< 1.1	NA	NA	NA	NA	
111-65-9	n-Octane	< 1.1	NA	NA	NA	NA	
127-18-4	Tetrachloroethene	< 1.1	NA	NA	NA	NA	
108-90-7	Chlorobenzene	< 1.1	NA	NA	NA	NA	
100-41-4	Ethylbenzene	< 1.0	NA	NA	NA	NA	
179601-23-1	m,p-Xylenes	< 2.1	NA	NA	NA	NA	
75-25-2	Bromoform	< 1.1	NA	NA	NA	NA	
100-42-5	Styrene	< 1.1	NA	NA	NA	NA	
95-47-6	o-Xylene	< 1.1	NA	NA	NA	NA	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	NA	NA	NA	NA	
98-82-8	Cumene	< 1.1	NA	NA	NA	NA	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
541-73-1	1,3-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
106-46-7	1,4-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
95-50-1	1,2-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	NA	NA	NA	NA	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	NA	NA	NA	NA	
87-68-3	Hexachlorobutadiene	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Aspect Consulting**
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Project ID: P1903136

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date(s) Collected: 5/28 - 5/29/19
Analyst: Chris Parnell Date(s) Received: 5/31/19
Sampling Media: TD Carbo 300 Sorbent Tube(s) Date(s) Analyzed: 6/4 - 6/5/19
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 % Recovered	1,2-Dichloroethane-d4 Acceptance Limits	Toluene-d8 % Recovered	Toluene-d8 Acceptance Limits	Bromofluorobenzene % Recovered	Bromofluorobenzene Acceptance Limits	Data Qualifier
Method Blank	P190604-MB	**99**	70-140	**101**	70-140	**90**	70-140	
Lab Control Sample	P190604-LCS	**94**	70-140	**95**	70-140	**96**	70-140	
Duplicate Lab Control Sample	P190604-DLCS	**91**	70-140	**94**	70-140	**97**	70-140	
GP20D190528-	P1903136-002	**96**	70-140	**95**	70-140	**94**	70-140	
GP19S190528-	P1903136-003	**96**	70-140	**94**	70-140	**94**	70-140	
GP19D190528-	P1903136-004	**94**	70-140	**96**	70-140	**94**	70-140	
GP18S190528-	P1903136-005	**95**	70-140	**95**	70-140	**93**	70-140	
GP18D190528-	P1903136-006	**98**	70-140	**96**	70-140	**97**	70-140	
GB6-190528-	P1903136-007	**94**	70-140	**93**	70-140	**91**	70-140	
G102190528-	P1903136-008	**94**	70-140	**92**	70-140	**94**	70-140	
GP62S190528-	P1903136-009	**94**	70-140	**93**	70-140	**91**	70-140	
GP60S190528-	P1903136-010	**104**	70-140	**92**	70-140	**95**	70-140	
GP56S190528-	P1903136-011	**98**	70-140	**92**	70-140	**94**	70-140	
GG8-190528-	P1903136-012	**95**	70-140	**92**	70-140	**94**	70-140	
GP20S190529-	P1903136-013	**94**	70-140	**92**	70-140	**94**	70-140	
GP64D190529-	P1903136-014	**100**	70-140	**91**	70-140	**93**	70-140	
GP63M190529-	P1903136-015	**98**	70-140	**92**	70-140	**93**	70-140	
GP63D190529-	P1903136-016	**97**	70-140	**91**	70-140	**93**	70-140	
GP16S190529-	P1903136-017	**101**	70-140	**93**	70-140	**99**	70-140	
GP16D190529-	P1903136-018	**99**	70-140	**92**	70-140	**94**	70-140	
UTRP190529-	P1903136-019	**99**	70-140	**91**	70-140	**86**	70-140	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Aspect Consulting**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190604-DLCS

Test Code: EPA TO-17 Date Collected: NA
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA
Analyst: Chris Parnell Date Analyzed: 6/04/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ng	Result LCS ng	Result DLCS ng	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	52.6	46.3	43.7	**88**	**83**	72-112	6	25	
74-87-3	Chloromethane	52.8	46.5	44.7	**88**	**85**	69-119	3	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	52.8	48.1	45.3	**91**	**86**	77-109	6	25	
75-01-4	Vinyl Chloride	53.5	49.2	47.1	**92**	**88**	79-116	4	25	
106-99-0	1,3-Butadiene	52.6	48.7	46.1	**93**	**88**	74-121	6	25	
75-00-3	Chloroethane	53.5	46.0	44.3	**86**	**83**	74-119	4	25	
64-17-5	Ethanol	256	248	238	**97**	**93**	75-134	4	25	
75-05-8	Acetonitrile	51.5	48.6	46.0	**94**	**89**	72-125	5	25	
67-64-1	Acetone	265	224	217	**85**	**82**	70-111	4	25	
75-69-4	Trichlorofluoromethane	52.8	47.1	45.4	**89**	**86**	69-116	3	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	103	98.7	94.6	**96**	**92**	66-133	4	25	
75-35-4	1,1-Dichloroethene	54.5	48.7	46.8	**89**	**86**	75-113	3	25	
75-09-2	Methylene Chloride	54.2	50.8	46.9	**94**	**87**	67-114	8	25	
76-13-1	Trichlorotrifluoroethane	53.9	48.6	46.1	**90**	**86**	75-113	5	25	
75-15-0	Carbon Disulfide	54.4	47.1	45.6	**87**	**84**	67-108	4	25	
156-60-5	trans-1,2-Dichloroethene	53.5	50.3	47.8	**94**	**89**	77-117	5	25	
75-34-3	1,1-Dichloroethane	53.9	50.3	47.6	**93**	**88**	77-114	6	25	
1634-04-4	Methyl tert-Butyl Ether	53.6	49.6	47.4	**93**	**88**	75-122	6	25	
78-93-3	2-Butanone (MEK)	51.9	48.5	46.6	**93**	**90**	74-139	3	25	
156-59-2	cis-1,2-Dichloroethene	52.7	48.7	46.6	**92**	**88**	77-117	4	25	
110-54-3	n-Hexane	53.9	49.4	47.1	**92**	**87**	76-115	6	25	
67-66-3	Chloroform	54.2	49.6	47.3	**92**	**87**	69-116	6	25	
109-99-9	Tetrahydrofuran (THF)	54.0	50.9	47.8	**94**	**89**	73-126	5	25	
107-06-2	1,2-Dichloroethane	53.7	47.2	44.8	**88**	**83**	61-115	6	25	
71-55-6	1,1,1-Trichloroethane	53.8	50.3	47.4	**93**	**88**	71-111	6	25	
71-43-2	Benzene	52.8	46.7	44.6	**88**	**84**	68-103	5	25	
56-23-5	Carbon Tetrachloride	52.9	49.0	47.4	**93**	**90**	70-116	3	25	
110-82-7	Cyclohexane	104	98.7	94.6	**95**	**91**	78-109	4	25	
78-87-5	1,2-Dichloropropane	54.0	53.5	51.0	**99**	**94**	80-111	5	25	
75-27-4	Bromodichloromethane	53.7	53.0	50.4	**99**	**94**	68-122	5	25	

Client: **Aspect Consulting**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1903136
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190604-DLCS

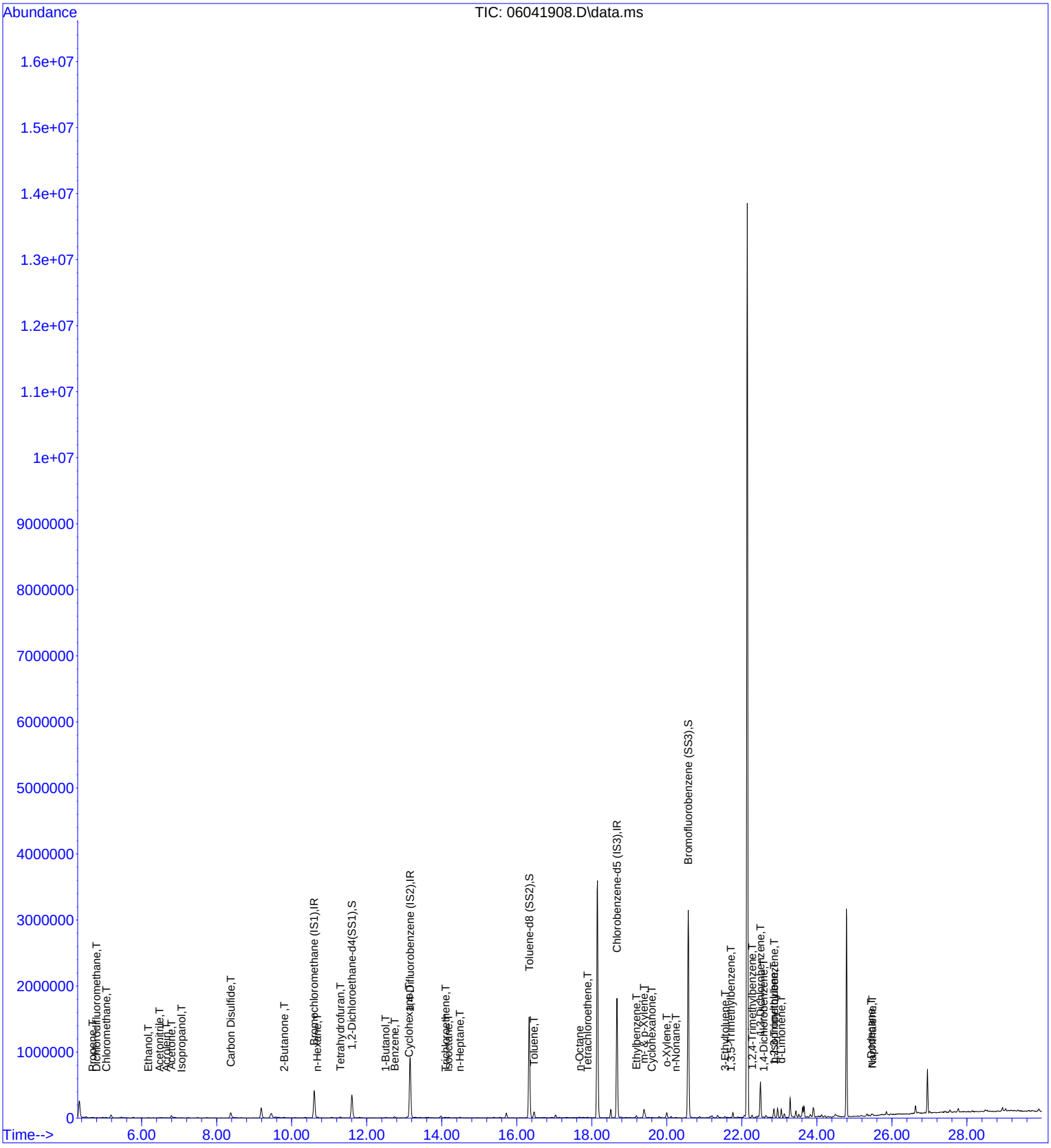
Test Code: EPA TO-17 Date Collected: NA
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA
Analyst: Chris Parnell Date Analyzed: 6/04/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ng	Result LCS ng	Result DLCS ng	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
79-01-6	Trichloroethene	53.4	52.2	49.3	**98**	**92**	82-111	6	25	
123-91-1	1,4-Dioxane	53.5	50.3	49.0	**94**	**92**	79-113	2	25	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	53.3	51.6	49.3	**97**	**92**	76-114	5	25	
142-82-5	n-Heptane	53.8	52.5	51.0	**98**	**95**	80-113	3	25	
10061-01-5	cis-1,3-Dichloropropene	53.6	54.4	51.5	**101**	**96**	82-120	5	25	
108-10-1	4-Methyl-2-pentanone	52.3	53.5	50.5	**102**	**97**	84-124	5	25	
10061-02-6	trans-1,3-Dichloropropene	53.2	55.2	52.5	**104**	**99**	79-127	5	25	
79-00-5	1,1,2-Trichloroethane	53.7	53.0	50.2	**99**	**93**	82-113	6	25	
108-88-3	Toluene	53.0	49.6	47.4	**94**	**89**	78-110	5	25	
591-78-6	2-Hexanone	53.6	53.5	52.0	**100**	**97**	79-126	3	25	
124-48-1	Dibromochloromethane	53.2	53.8	51.9	**101**	**98**	81-113	3	25	
106-93-4	1,2-Dibromoethane	54.1	53.6	51.0	**99**	**94**	82-118	5	25	
111-65-9	n-Octane	54.3	56.6	55.9	**104**	**103**	74-116	1	25	
127-18-4	Tetrachloroethene	53.2	55.3	54.7	**104**	**103**	73-111	1	25	
108-90-7	Chlorobenzene	53.7	54.1	53.6	**101**	**100**	76-111	1	25	
100-41-4	Ethylbenzene	53.1	53.7	53.3	**101**	**100**	74-113	1	25	
179601-23-1	m,p-Xylenes	107	110	109	**103**	**102**	74-113	1	25	
75-25-2	Bromoform	53.4	56.5	56.0	**106**	**105**	73-117	0.9	25	
100-42-5	Styrene	53.0	56.6	56.5	**107**	**107**	78-121	0	25	
95-47-6	o-Xylene	53.5	55.3	54.6	**103**	**102**	73-114	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	53.6	56.4	55.0	**105**	**103**	72-116	2	25	
98-82-8	Cumene	53.6	54.9	54.4	**102**	**101**	75-113	1	25	
108-67-8	1,3,5-Trimethylbenzene	53.5	54.5	54.2	**102**	**101**	73-115	1	25	
95-63-6	1,2,4-Trimethylbenzene	53.8	56.7	55.9	**105**	**104**	73-117	1	25	
541-73-1	1,3-Dichlorobenzene	54.0	56.5	56.3	**105**	**104**	76-118	1	25	
106-46-7	1,4-Dichlorobenzene	54.0	56.6	56.7	**105**	**105**	74-113	0	25	
95-50-1	1,2-Dichlorobenzene	53.9	55.4	55.8	**103**	**104**	74-115	1	25	
96-12-8	1,2-Dibromo-3-chloropropane	52.3	58.4	57.2	**112**	**109**	78-131	3	25	
120-82-1	1,2,4-Trichlorobenzene	53.6	59.6	60.7	**111**	**113**	76-133	2	25	
91-20-3	Naphthalene	50.8	55.6	56.2	**109**	**111**	77-131	2	25	
87-68-3	Hexachlorobutadiene	52.3	54.7	55.0	**105**	**105**	74-115	0	25	

Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041908.D Vial: 42
Acq On : 4 Jun 2019 14:32 Operator: CP
Sample : P1903136-002 Inst : GCMS18
Misc : C300/TO17CT/TO17 1124822

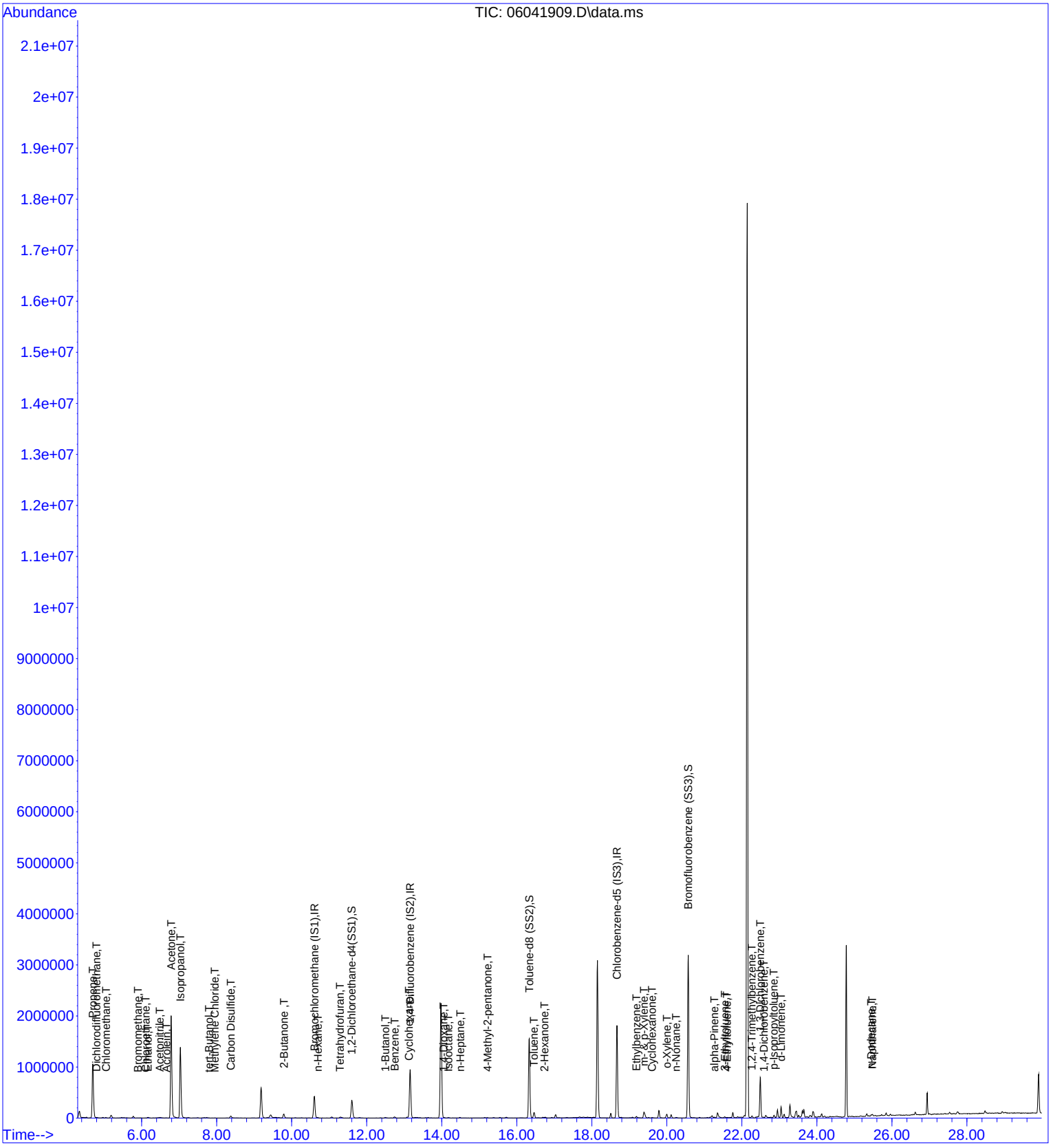
Quant Time: Jun 07 17:10:33 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041909.D Vial: 43
Acq On : 4 Jun 2019 15:29 Operator: CP
Sample : P1903136-003 Inst : GCMS18
Misc : C300/TO17CT/TO17 1110233

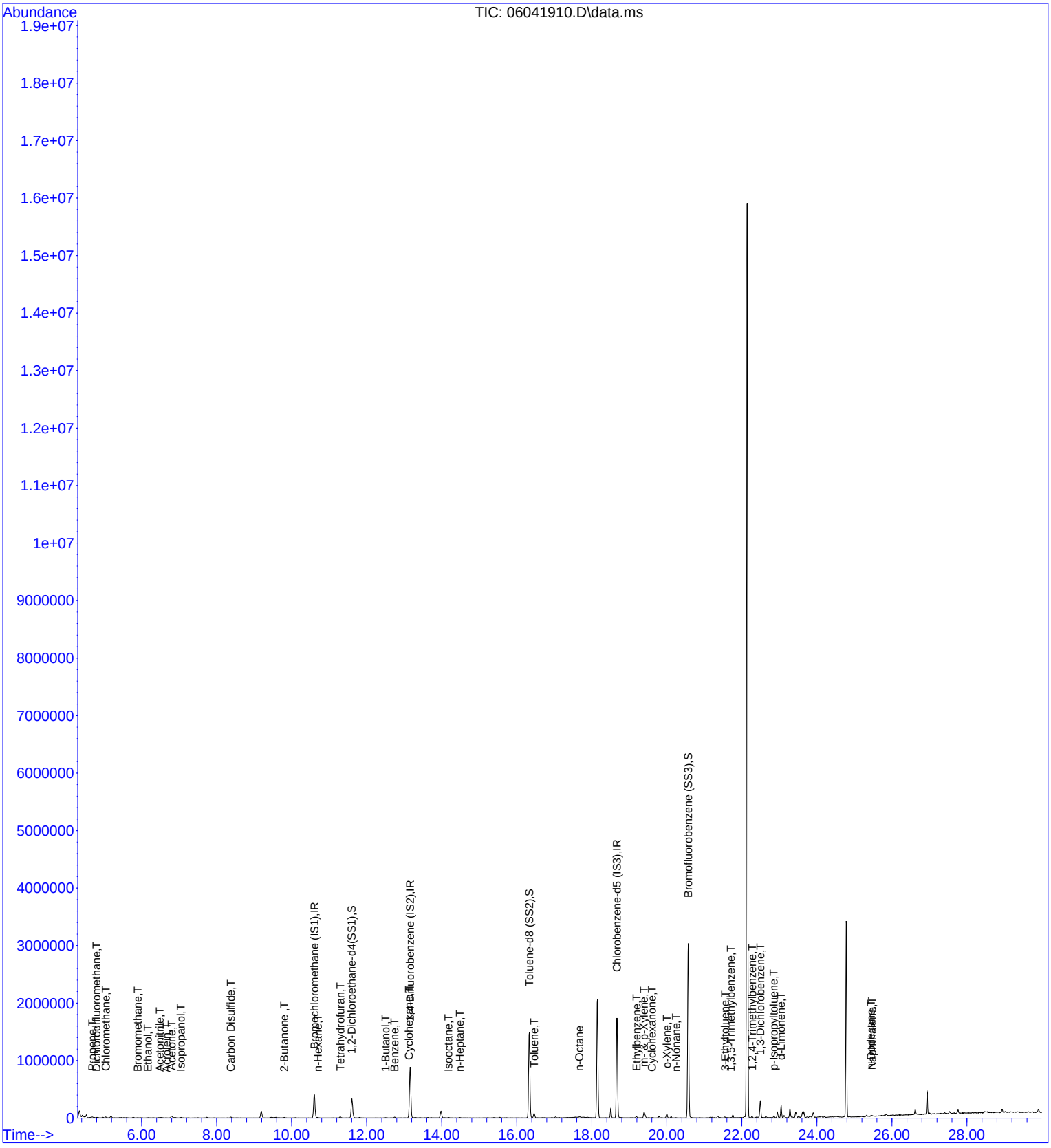
Quant Time: Jun 07 17:11:47 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041910.D Vial: 44
Acq On : 4 Jun 2019 16:07 Operator: CP
Sample : P1903136-004 Inst : GCMS18
Misc : C300/TO17CT/TO17 1110891

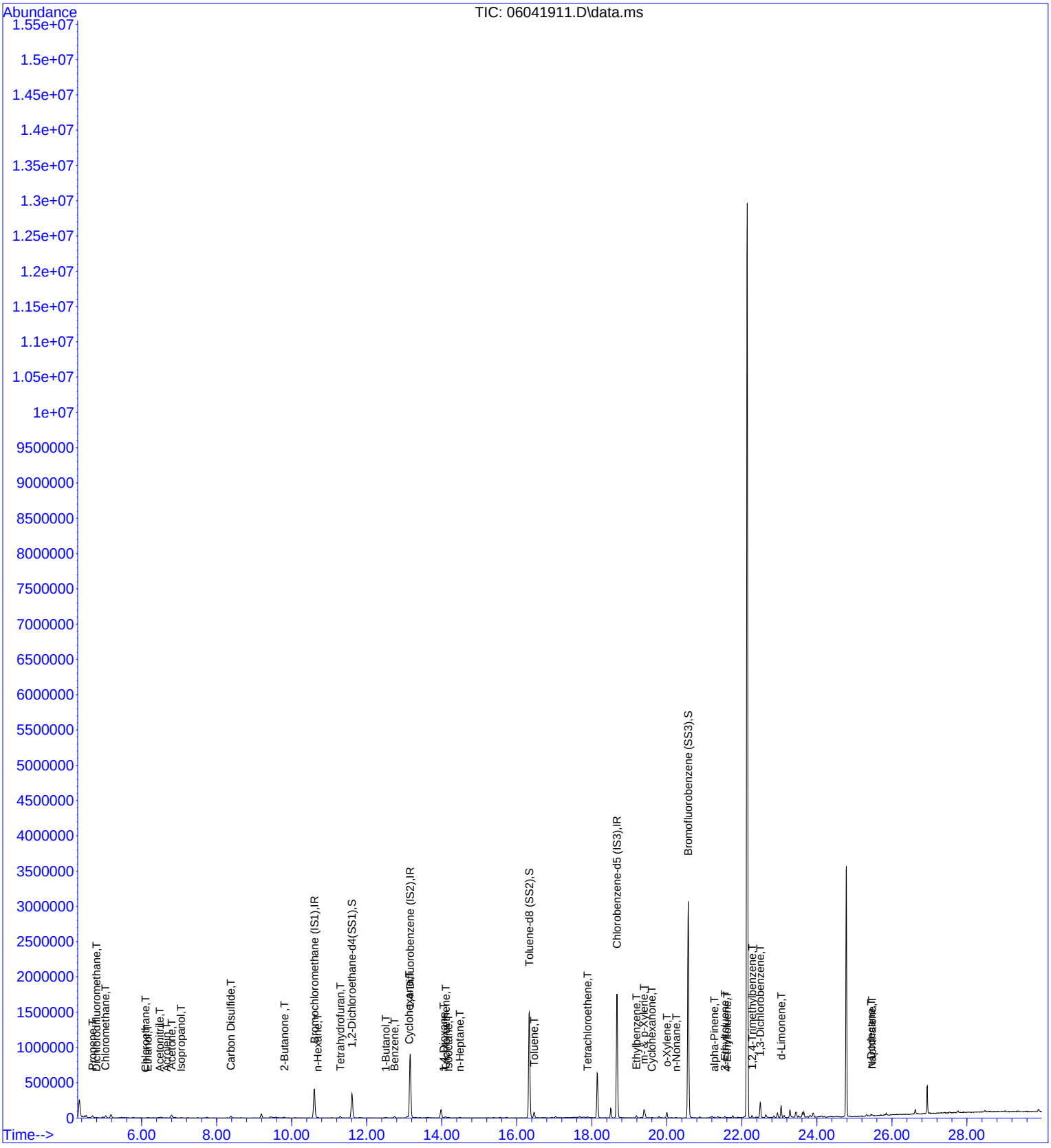
Quant Time: Jun 07 17:12:35 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041911.D Vial: 45
Acq On : 4 Jun 2019 16:45 Operator: CP
Sample : P1903136-005 Inst : GCMS18
Misc : C300/TO17CT/TO17 1059792

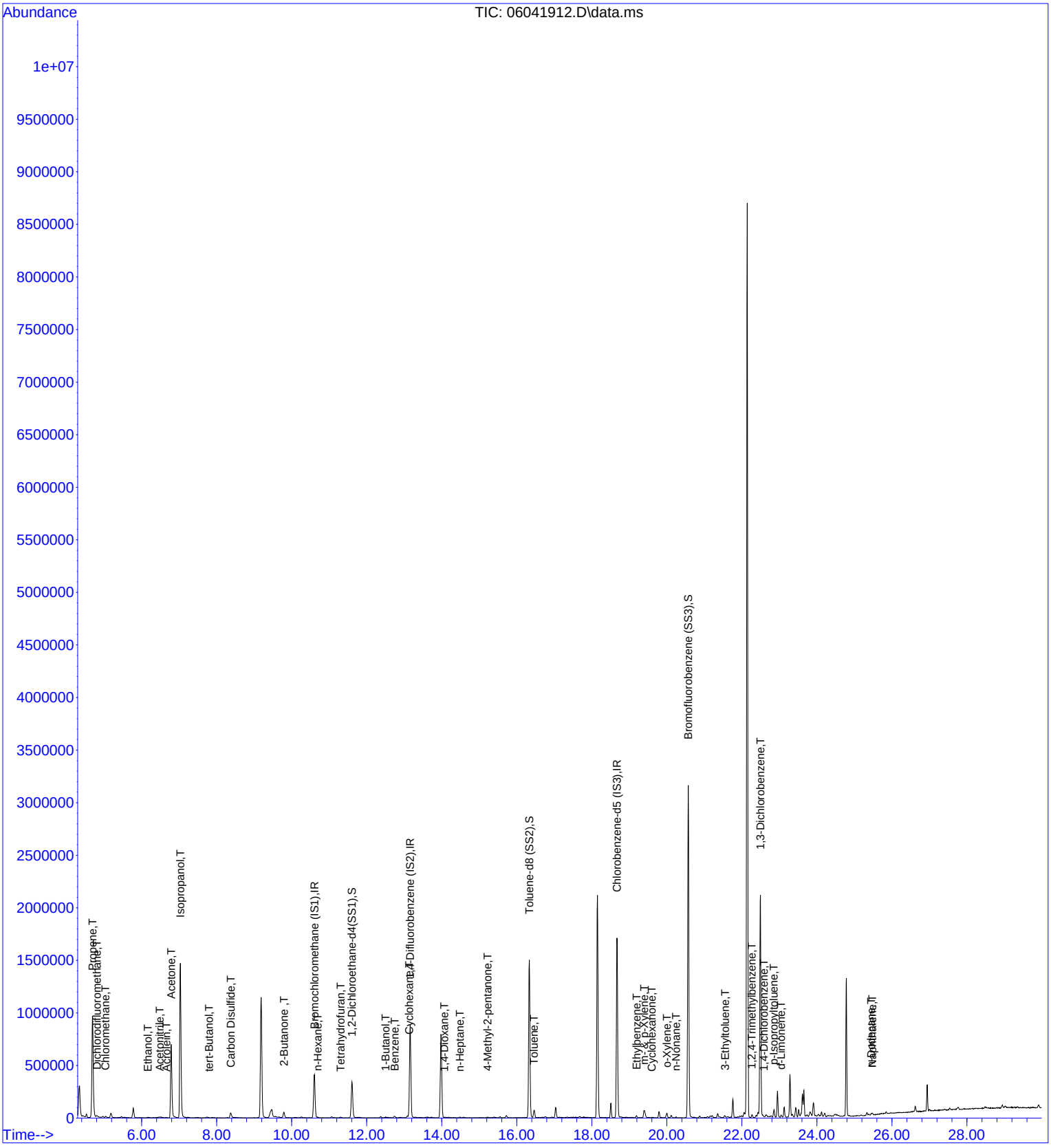
Quant Time: Jun 07 17:13:49 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041912.D Vial: 46
Acq On : 4 Jun 2019 17:24 Operator: CP
Sample : P1903136-006 Inst : GCMS18
Misc : C300/TO17CT/TO17 1124996

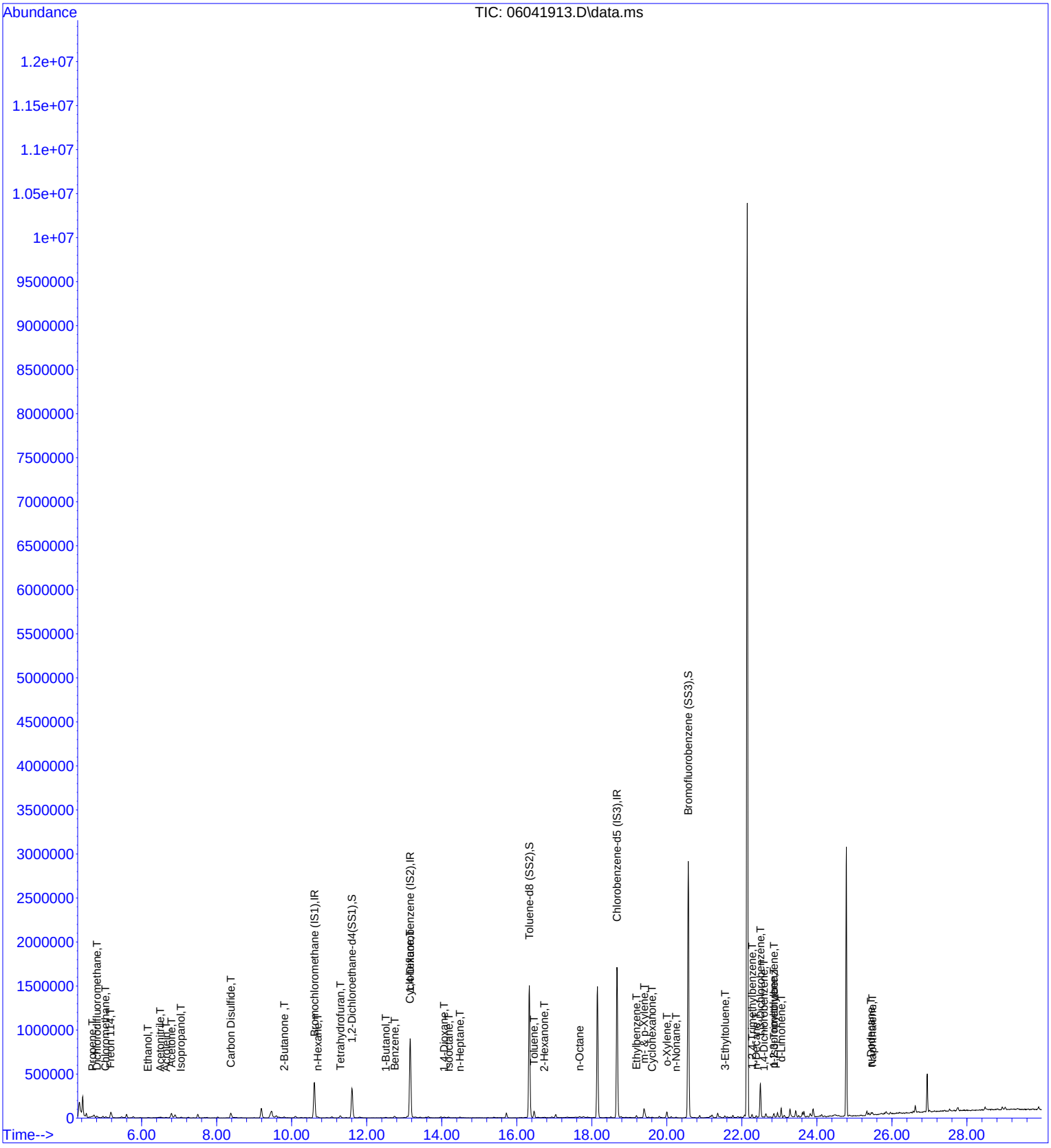
Quant Time: Jun 07 17:15:13 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041913.D Vial: 47
Acq On : 4 Jun 2019 18:03 Operator: CP
Sample : P1903136-007 Inst : GCMS18
Misc : C300/TO17CT/TO17 1064865

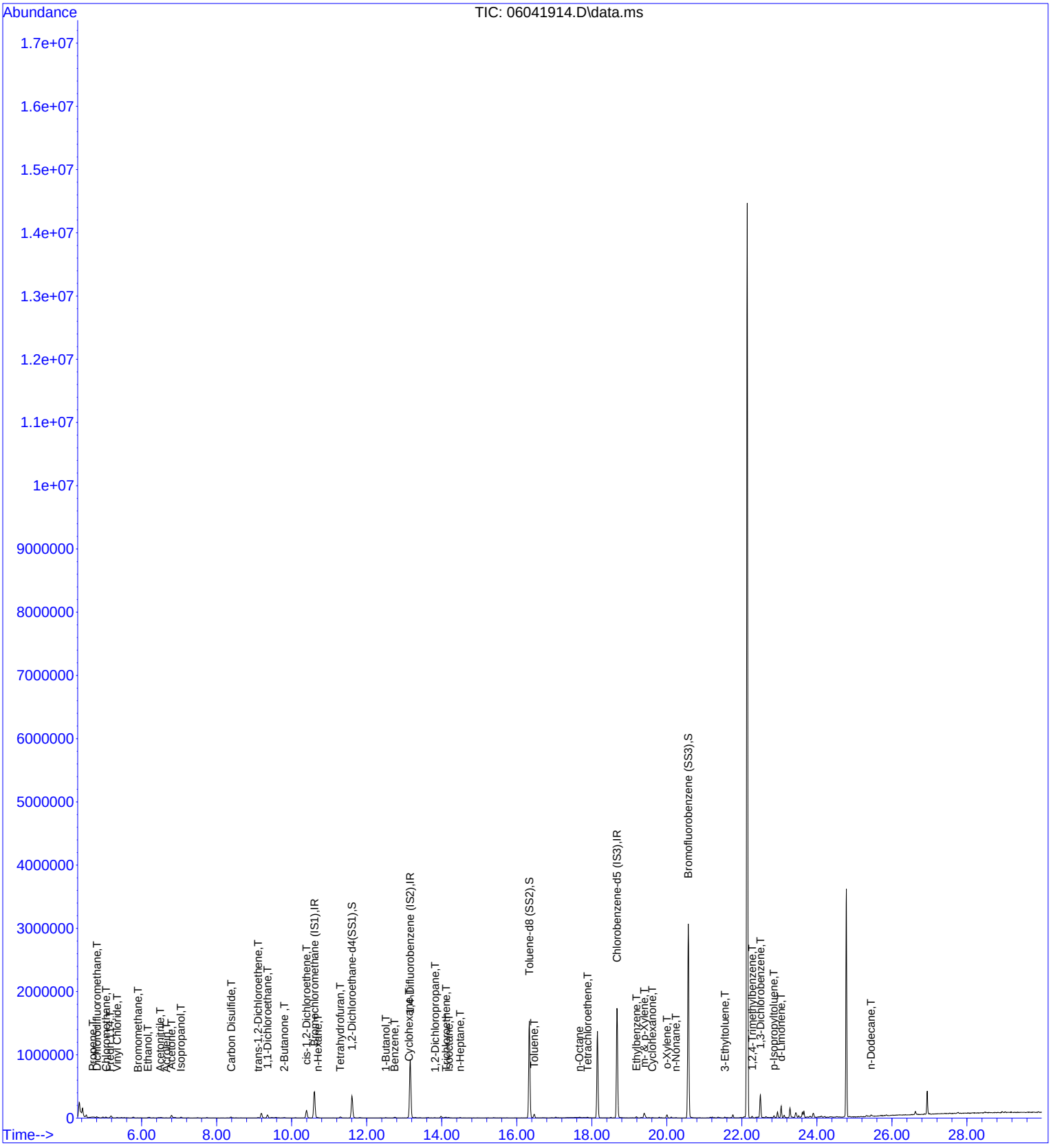
Quant Time: Jun 07 17:16:02 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041914.D Vial: 48
Acq On : 4 Jun 2019 18:43 Operator: CP
Sample : P1903136-008 Inst : GCMS18
Misc : C300/TO17CT/TO17 1110439

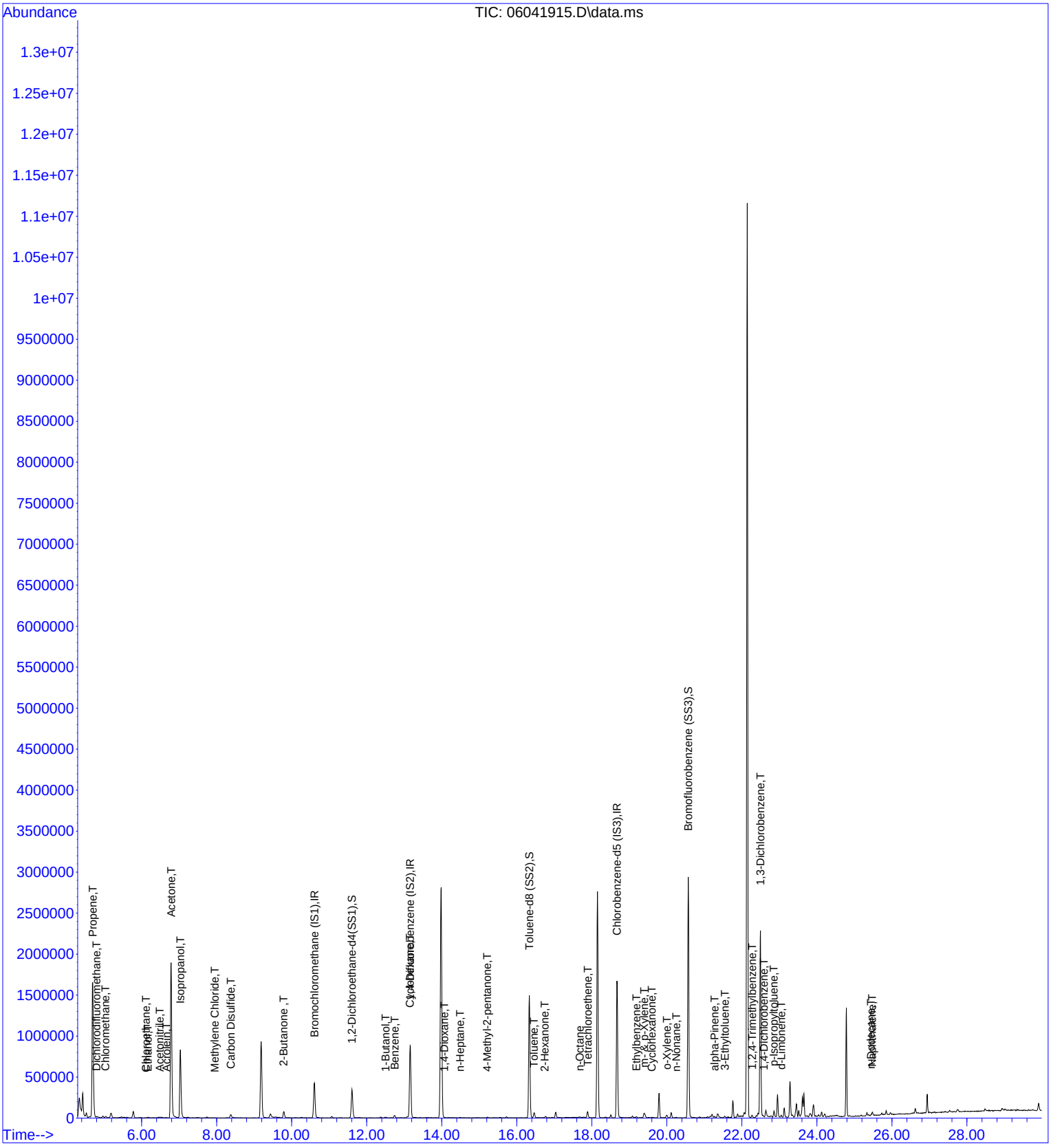
Quant Time: Jun 07 17:17:11 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041915.D Vial: 49
Acq On : 4 Jun 2019 19:23 Operator: CP
Sample : P1903136-009 Inst : GCMS18
Misc : C300/TO17CT/TO17 1110295

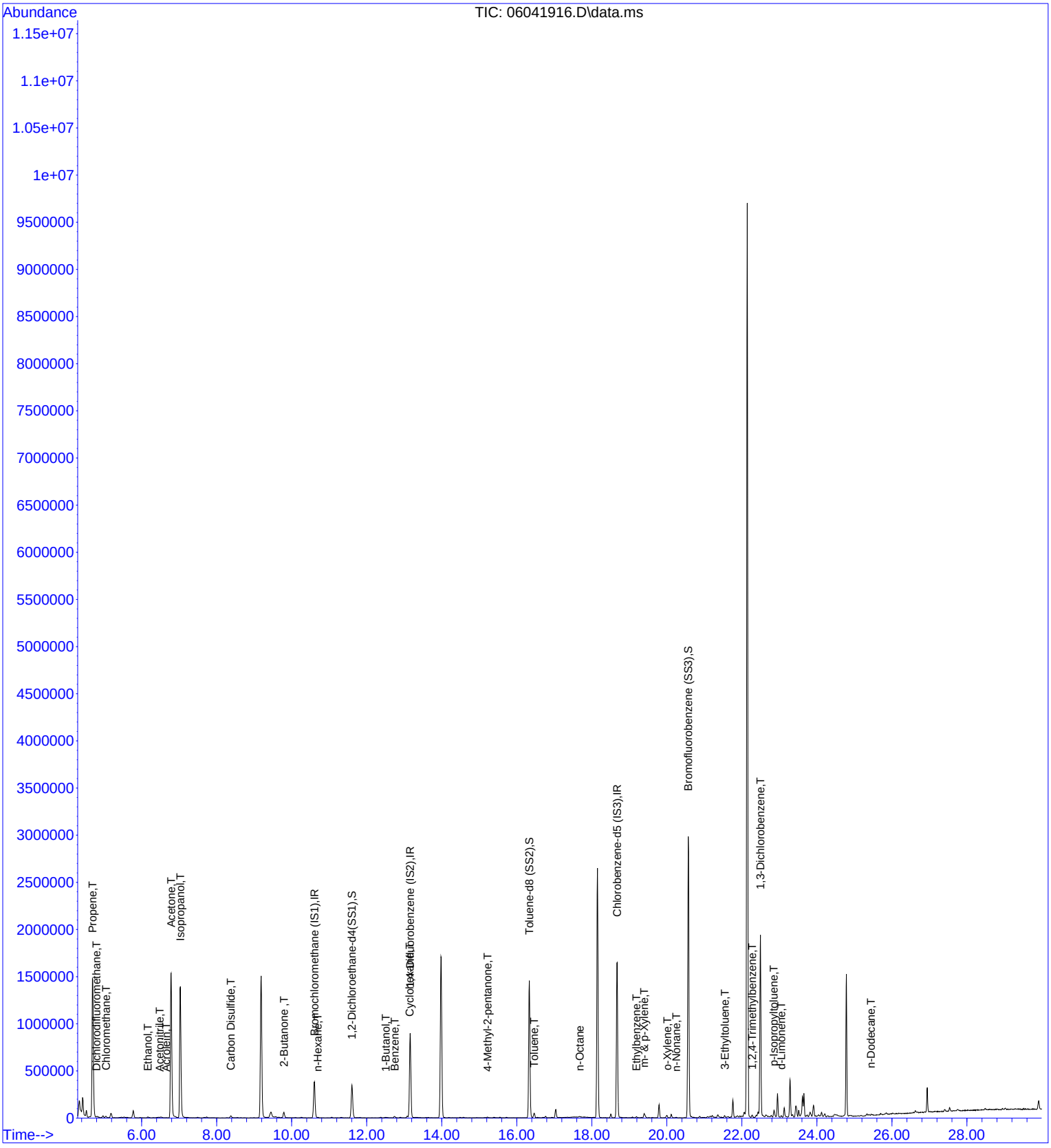
Quant Time: Jun 07 17:18:42 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041916.D Vial: 50
Acq On : 4 Jun 2019 20:04 Operator: CP
Sample : P1903136-010 Inst : GCMS18
Misc : C300/TO17CT/TO17 1125722

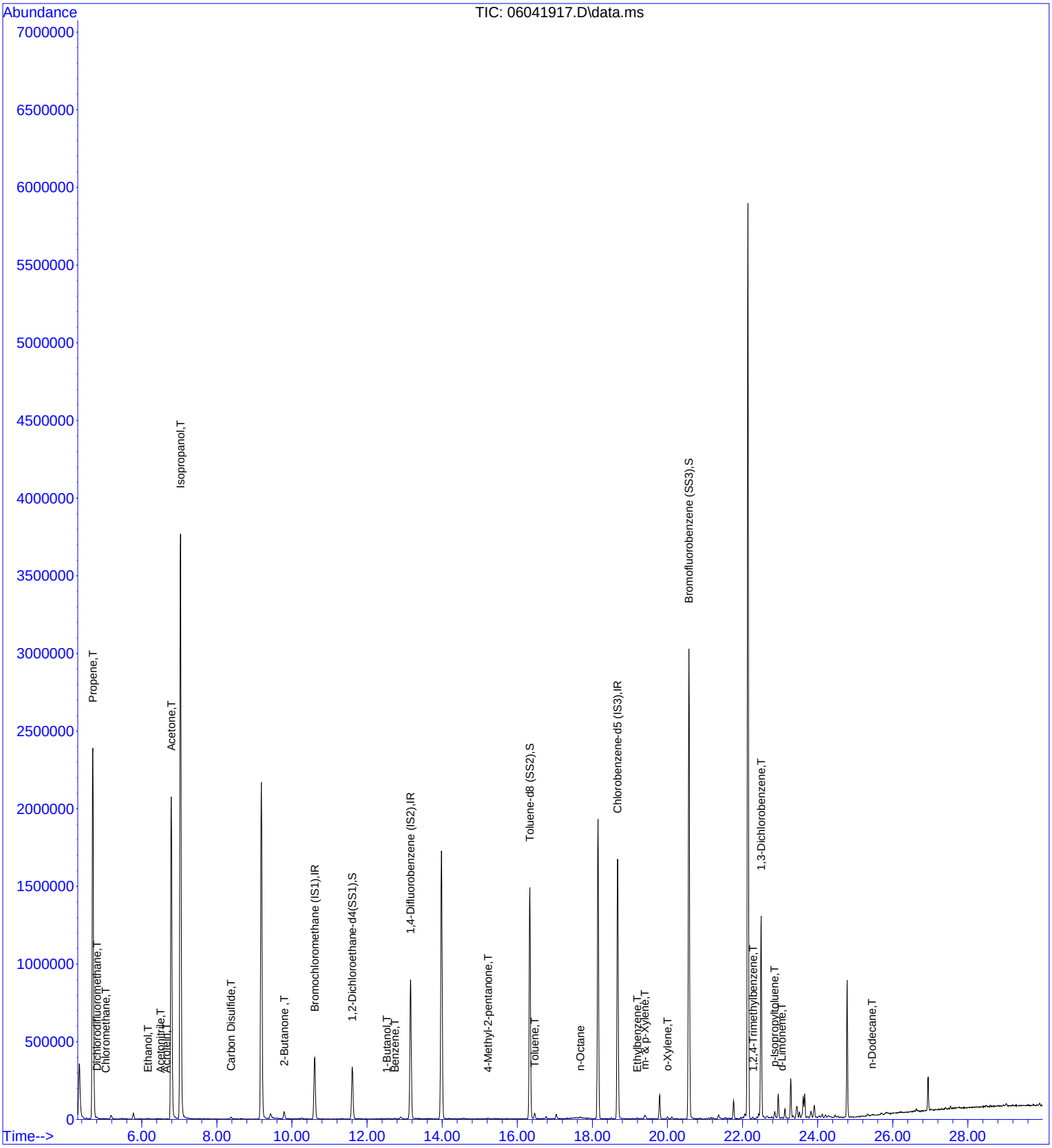
Quant Time: Jun 07 17:19:43 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041917.D Vial: 51
Acq On : 4 Jun 2019 20:45 Operator: CP
Sample : P1903136-011 Inst : GCMS18
Misc : C300/TO17CT/TO17 1124163

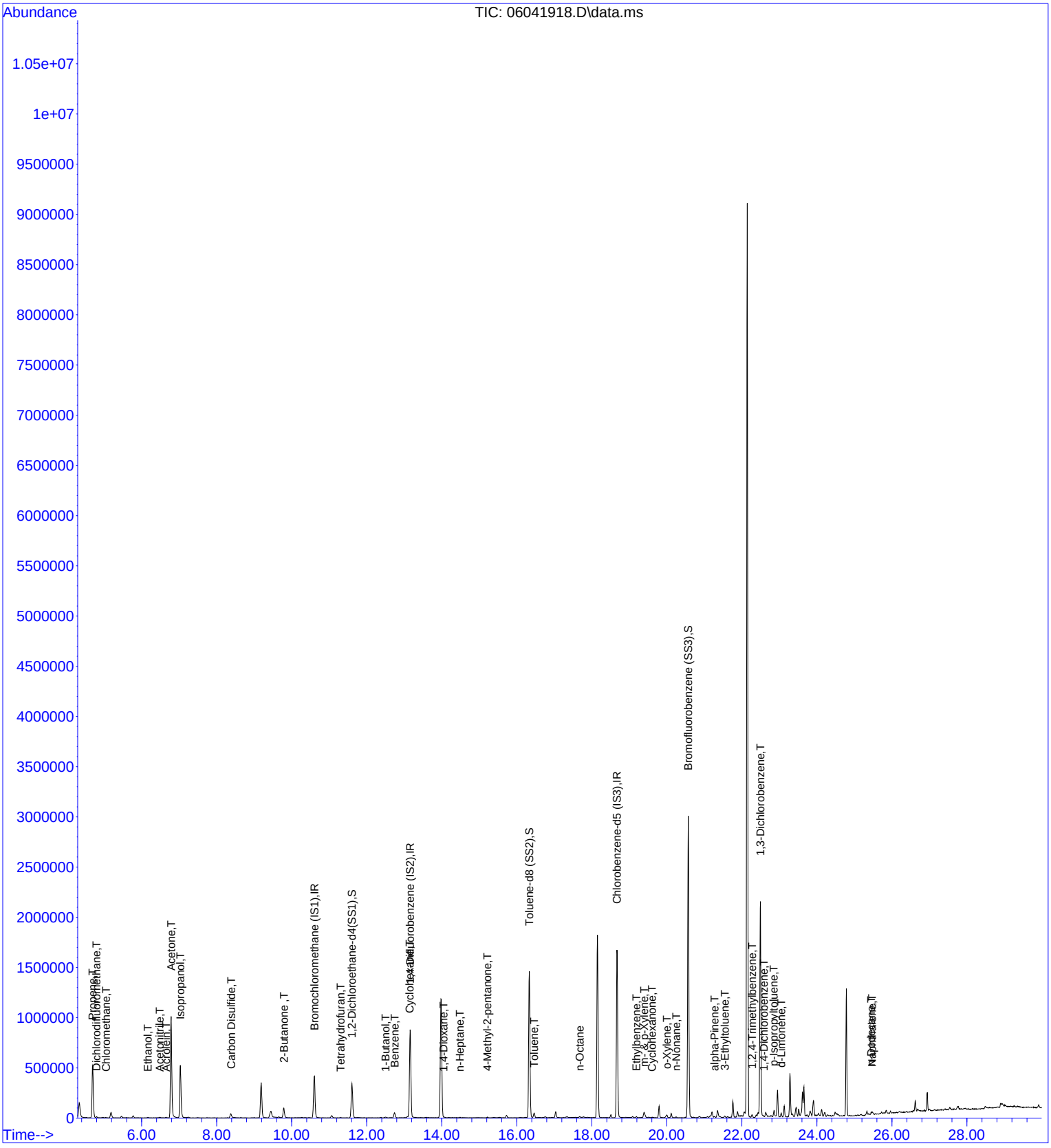
Quant Time: Jun 07 17:20:47 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041918.D Vial: 52
Acq On : 4 Jun 2019 21:26 Operator: CP
Sample : P1903136-012 Inst : GCMS18
Misc : C300/TO17CT/TO17 1110244

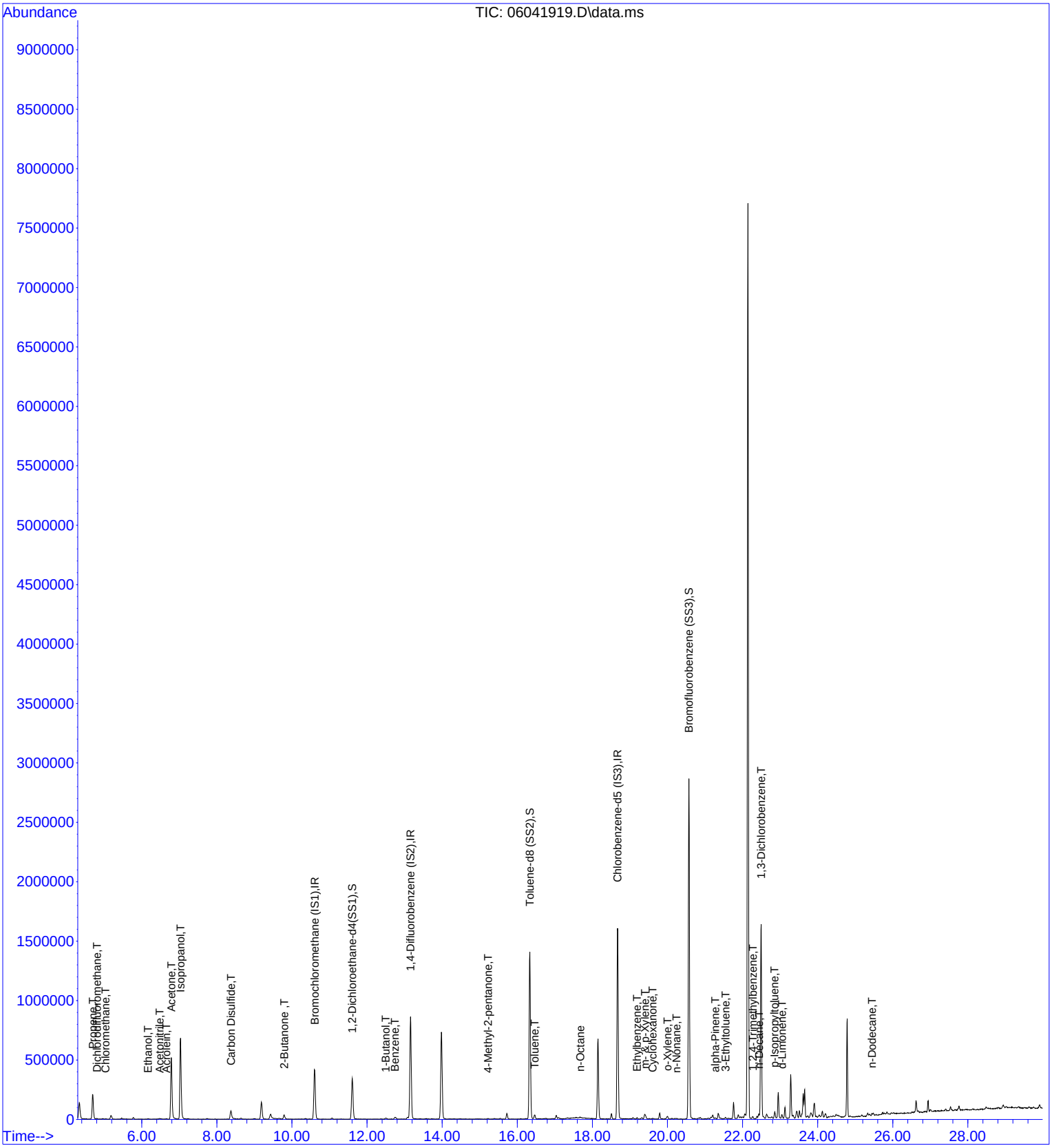
Quant Time: Jun 07 17:21:34 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041919.D Vial: 53
Acq On : 4 Jun 2019 22:07 Operator: CP
Sample : P1903136-013 Inst : GCMS18
Misc : C300/TO17CT/TO17 1112369

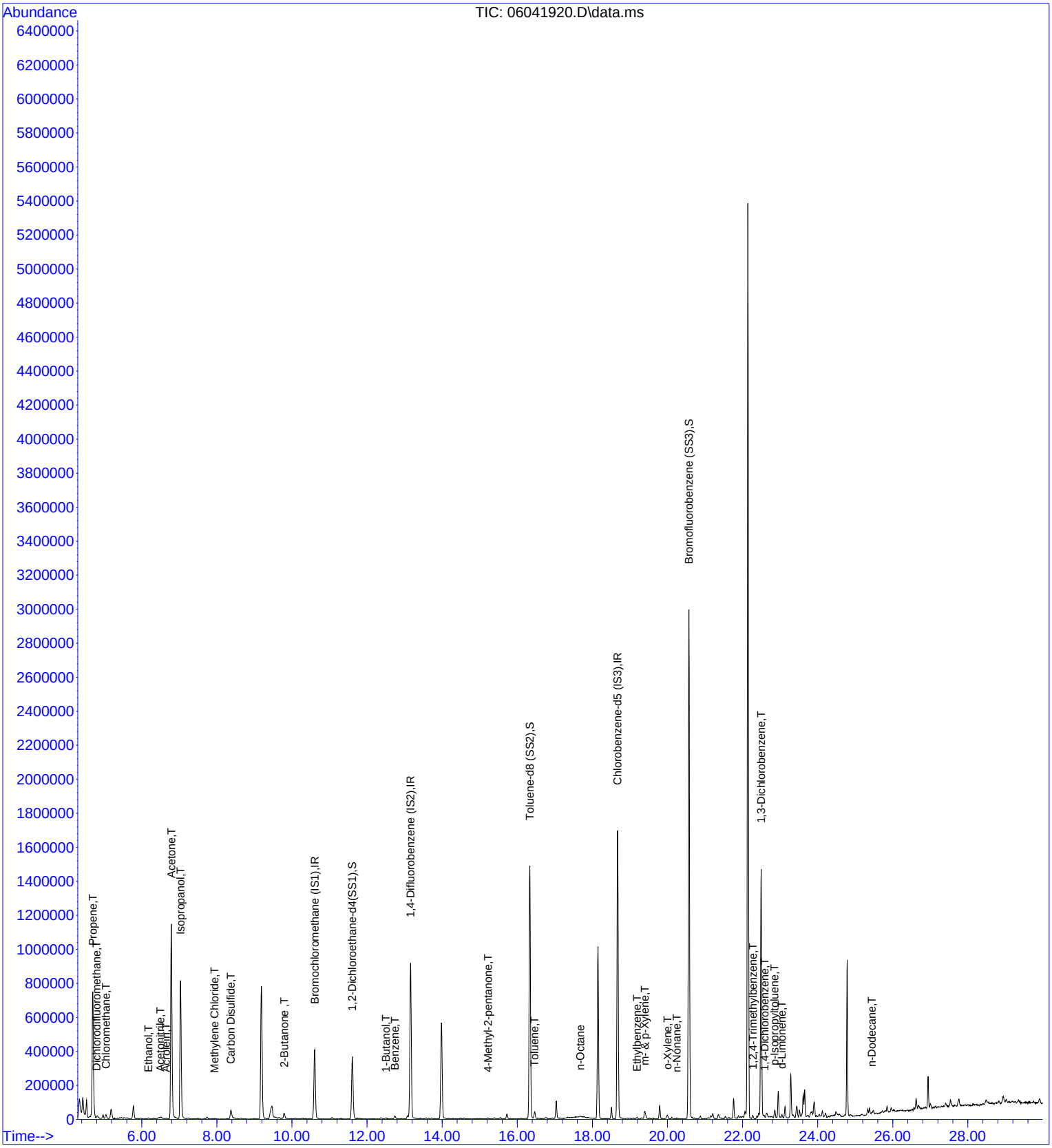
Quant Time: Jun 05 06:55:10 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041920.D Vial: 54
Acq On : 4 Jun 2019 22:47 Operator: CP
Sample : P1903136-014 Inst : GCMS18
Misc : C300/TO17CT/TO17 1124869

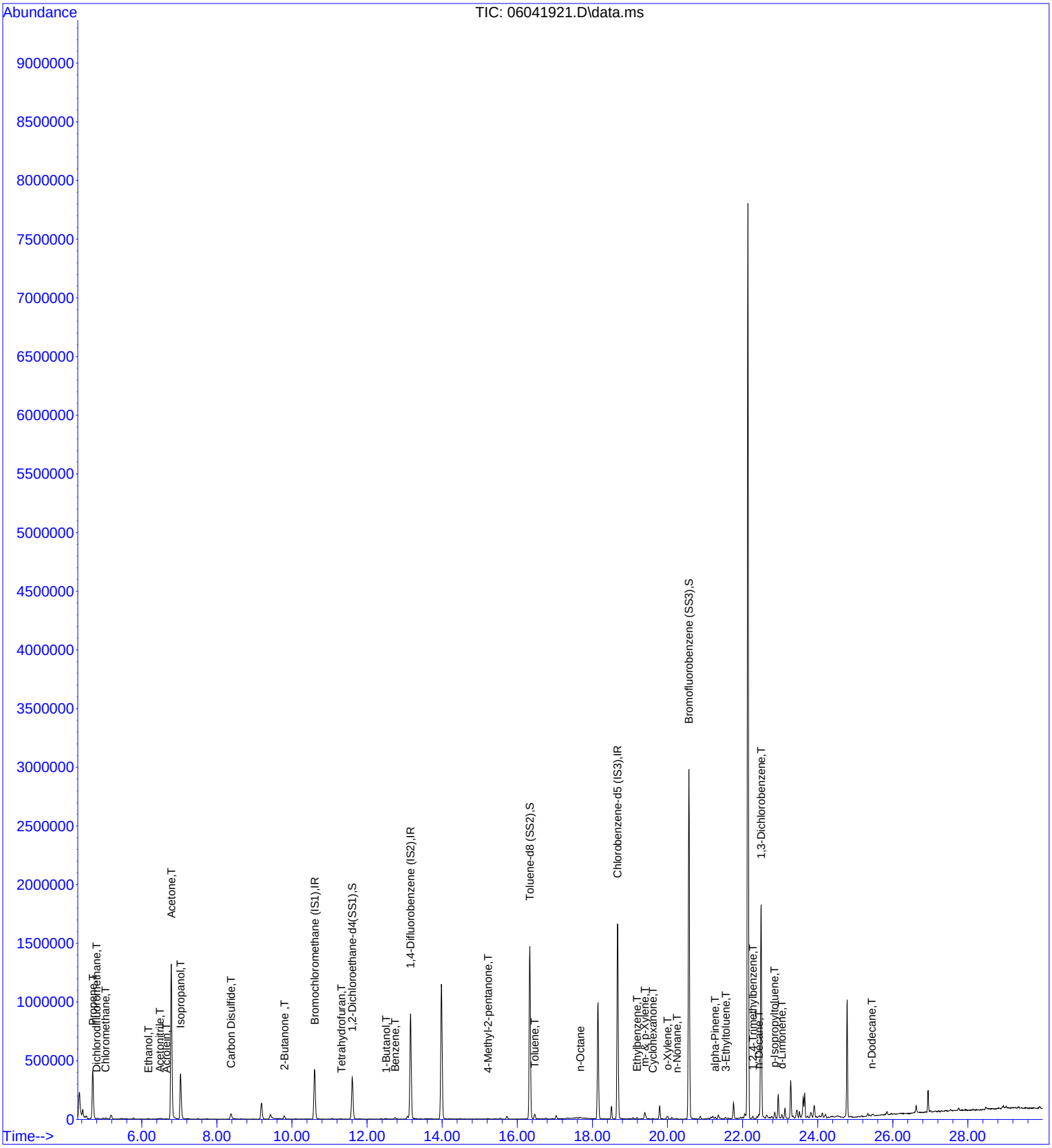
Quant Time: Jun 07 17:23:43 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041921.D Vial: 55
Acq On : 4 Jun 2019 23:27 Operator: CP
Sample : P1903136-015 Inst : GCMS18
Misc : C300/TO17CT/TO17 1060860

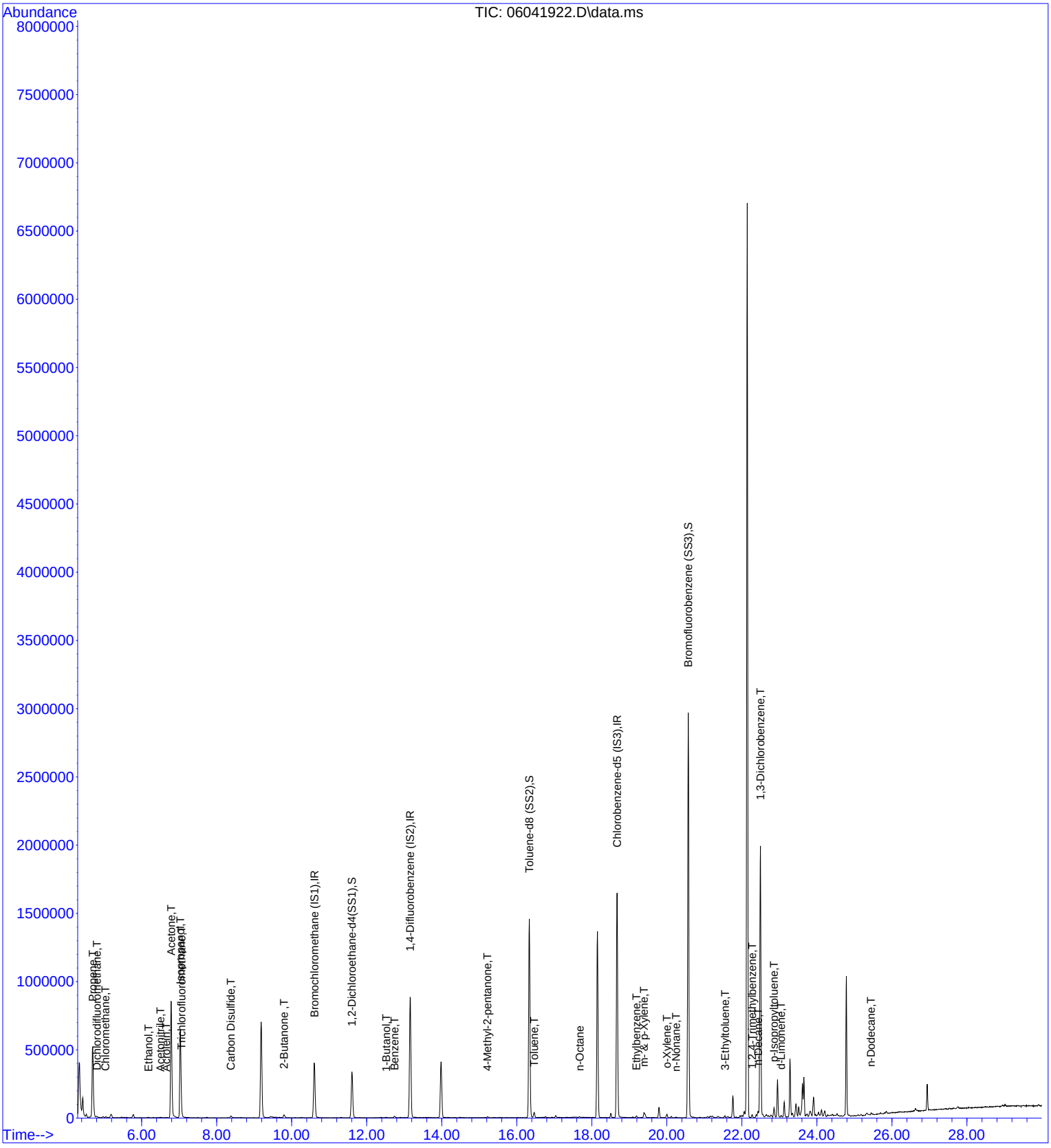
Quant Time: Jun 05 06:55:14 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041922.D Vial: 56
Acq On : 5 Jun 2019 00:08 Operator: CP
Sample : P1903136-016 Inst : GCMS18
Misc : C300/TO17CT/TO17 1064294

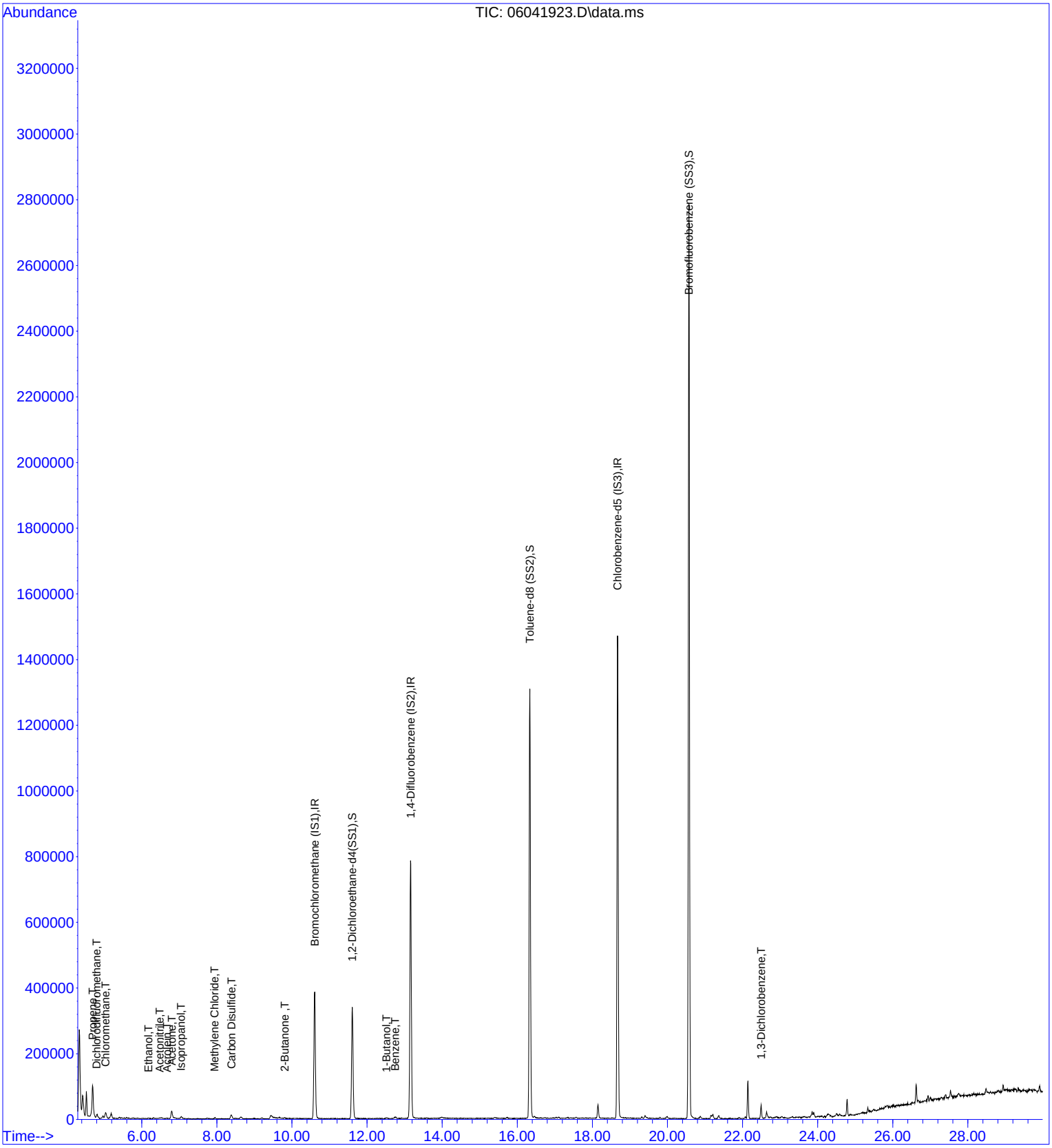
Quant Time: Jun 07 17:25:42 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041923.D Vial: 57
Acq On : 5 Jun 2019 00:47 Operator: CP
Sample : P1903136-017 Inst : GCMS18
Misc : C300/TO17CT/TO17 172445

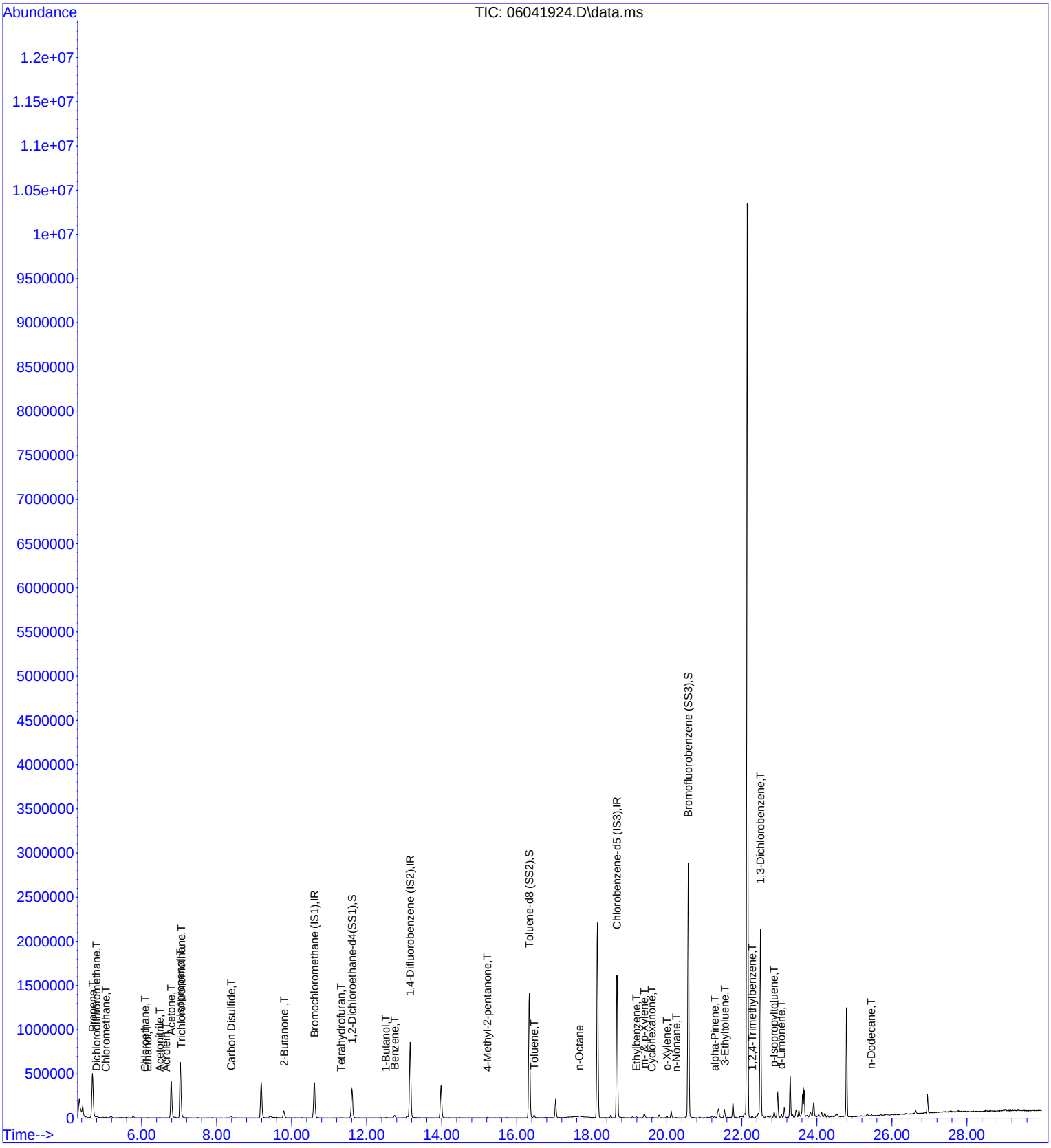
Quant Time: Jun 07 17:26:28 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041924.D Vial: 58
Acq On : 5 Jun 2019 1:27 Operator: CP
Sample : P1903136-018 Inst : GCMS18
Misc : C300/TO17CT/TO17 377894

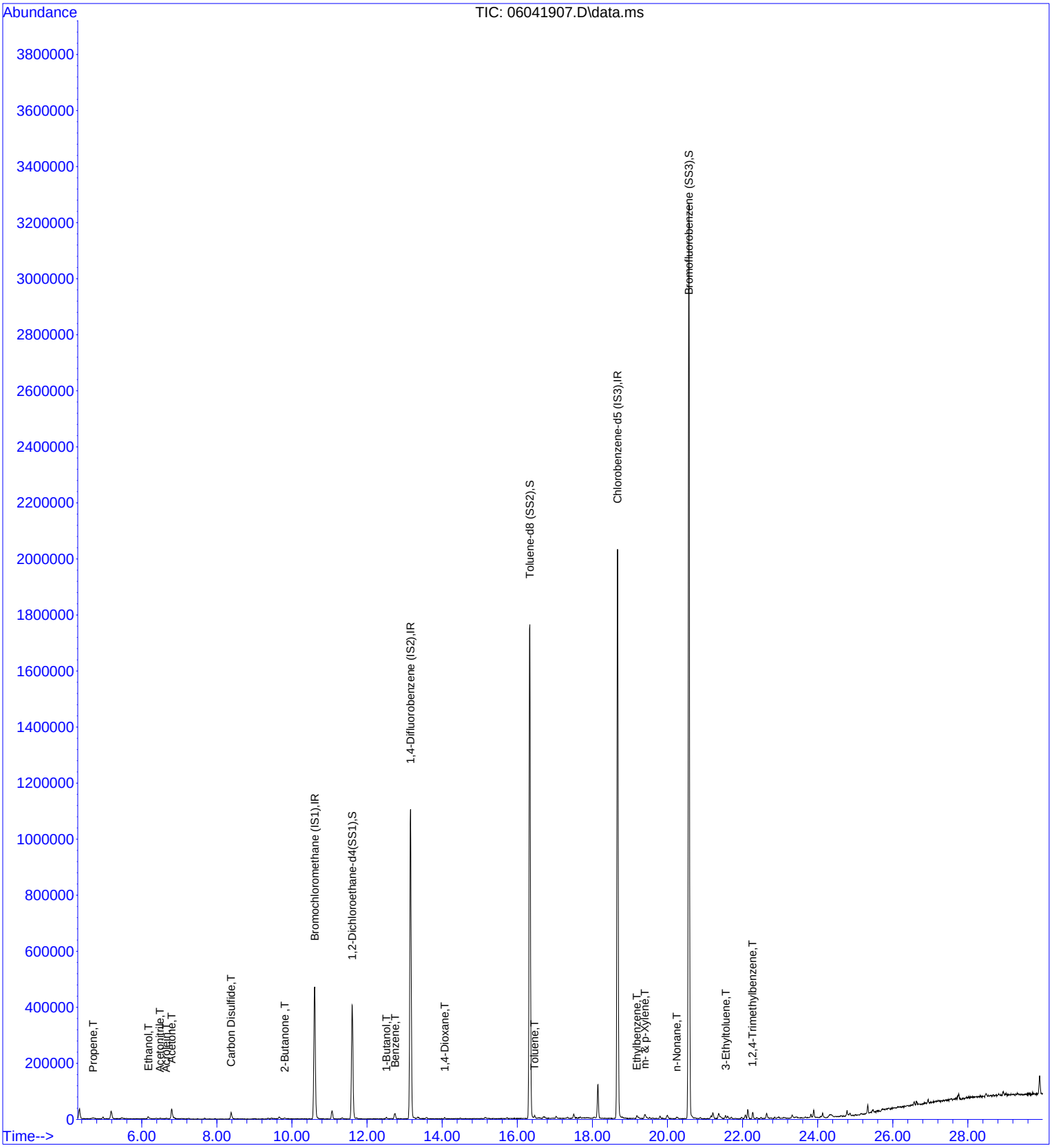
Quant Time: Jun 07 17:27:14 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 06\04\06041907.D Vial: 41
Acq On : 4 Jun 2019 13:55 Operator: CP
Sample : P1903136-019 Inst : GCMS18
Misc : C300/TO17CT/TO17 1052973

Quant Time: Jun 04 14:53:45 2019
Quant Method : I:\MS18\METHODS\F18040519.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Apr 05 12:07:37 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



APPENDIX B

Photograph Examples

Photograph 1: High-flow purge sample train set up at GP-20A/C.

Photograph 2: Aspect staff monitor methane readings during the purge of GP-63B/C.

Photograph 3: Aspect staff monitor methane readings during the purge of MW-102.

Photograph 4: Aspect field staff collecting a sample from GP-16A/C.

APPENDIX C

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.