ZipperGeo
Geoprofessional Consultants

February 17, 2020

Mill Creek Crossing LLC
22833 Bothell Everett Highway, Suite 207
Bothell, Washington 98021

Attn: Mr. Nicholas Echelbarger

Re: December 2019 Groundwater Monitoring Report – Former Prime Cleaners
18001 Bothell Everett Highway
Bothell, Snohomish County, Washington
ZGA Project No. 1001.25
VCP #NW2571

Dear Mr. Echelbarger:

Zipper Geo Associates, LLC (ZGA) is pleased to submit this Groundwater Monitoring Report for the above referenced site. This investigation was performed in general accordance with ZGA's Proposal No. P14297R, dated July 2, 2015 and includes results for sampling events completed in December 2019.

We appreciate the opportunity to perform these services for Mill Creek Crossing LLC. Please contact the undersigned at (425) 582-9928 if you have questions regarding the information provided in the report.

Sincerely,
Zipper Geo Associates, LLC

Kaelin Newman, GIT
Staff Geologist

Jon Einarsen, LG
Principal

Attachments: Appendix A – Figures
Appendix B – Laboratory Reports

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

REQUEST FOR OPINION FORM

Use this form to request a written opinion on your planned or completed independent remedial action under the Voluntary Cleanup Program (VCP). Attach to this form the plans or reports documenting the remedial action. Please submit only one form for each request.

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are requesting a written opinion under the VCP. This information may be found on the VCP Agreement.

Facility/Site Name: Former Prime Cleaners	
Facility/Site Address: 18001 Bothell-Everett Highway	
Facility/Site No:	VCP Project No.: NW2571

Step 2: REQUEST WRITTEN OPINION ON PLAN OR REPORT

What type of independent remedial action plan or report are you submitting to Ecology for review under the VCP? Please check all that apply.

- ☐ Remedial investigation plan
- ☐ Remedial investigation report
- ☐ Feasibility study report
- ☐ Property cleanup* plan (* cleanup of one or more parcels located within the Site)
- ☐ Property cleanup* report
- ☐ Site cleanup plan
- ☒ Site cleanup report
- ☒ Other – please specify: Request for NFA with Environmental Covenant

Do you want Ecology to provide you with a written opinion on the planned or completed independent remedial action?

☒ Yes ☐ No

Please note that Ecology's opinion will be limited to:

- Whether the planned or completed remedial action at the site meets the substantive requirements of the Model Toxics Control Act (MTCA), and/or
- Whether further remedial action is necessary at the site under MTCA.

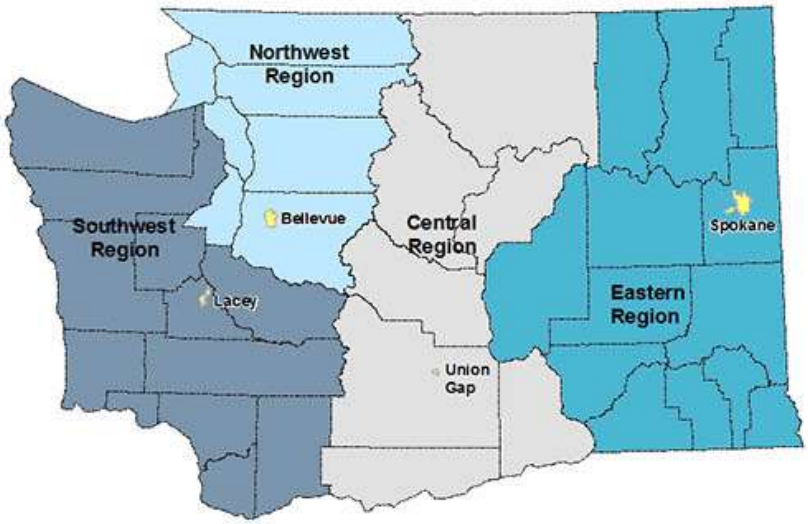
Step 3: REPRESENTATIONS AND SIGNATURE

The undersigned representative of the Customer hereby certifies that he or she is fully authorized to request services from Ecology under the Agreement for this VCP Project.

Name: Jon Einarsen		Title: Principal
Signature:		Date: 2-28-20
Organization: Zipper Geo Associates LLC		
Mailing address: 19019 36th Avenue West, Suite E		
City: Lynnwood	State: WA	Zip code: 98036
Phone: 425-582-9928	Fax:	E-mail: jeinarsen@zippergeo.com

Step 4: SUBMITTAL

Please mail your completed form and the independent remedial action plan or report that you are requesting Ecology review to the site manager Ecology assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

ZipperGeo
Geoprofessional Consultants

March 6, 2020

Washington State Department of Ecology
3190 160th Avenue Southeast
Bellevue, Washington 98008-5452

Attn: Ms. Sonia Fernandez

Re: Request for Opinion
Former Prime Cleaners
18001 Bothell Everett Highway
Bothell, Snohomish County, Washington
ZGA Project No. 1001.25
VCP #NW2571

Dear Ms. Fernandez:

The purpose of this letter is to request a No Further Action determination with an Environmental Covenant for the Former Prime Cleaners. This request is based on the following analytical results for groundwater and indoor air:

- Ten groundwater monitoring wells are located at the Site. Only tetrachloroethylene (PCE) has been reported above the MTCA Method A cleanup level (CUL). PCE has never been detected in three wells (MW-2, MW-9 and MW-10), and has never been reported in concentrations above the MTCA Method A CUL level (5 ug/L) in MW-5 and MW-6. PCE has been detected above the CUL once in MW-1 (12 ug/L, June 17, 2009) and MW-7 (8 ug/L, March 6, 2014). Historically PCE has exceeded the CUL in MW-3, MW-4, and MW-8.

- Recently, the concentration of PCE in MW-3 has been below the Method A CUL in five of the last six sampling events, with the single exceedance reported at 6.78 ug/L. The concentration of PCE in MW-4 has fallen to as low as 10.7 ug/L and in MW-8 to as low as 12.1 ug/L in 2019.

- The concentration of PCE has never exceeded the MTCA Method B Groundwater Screening Level (SL, 24 ug/L) for Vapor Intrusion in MW-3. The concentration of PCE has been below the SL in MW-4 for two of the last three sampling events. The concentration of PCE has been below the SL in MW-8 for the last five sampling events, extending back to 2017.

- Dry cleaning solvents have not been detected in indoor air inside if the former Prime Cleaners and two adjacent tenant spaces for three consecutive sampling events.

We appreciate your review of our reports. Please contact the undersigned at (425) 582-9928 if you have questions or require additional information.

Sincerely,
Zipper Geo Associates, LLC

Jon Einarsen, LG, LHG
Principal

cc: Nicholas Echelbarger
Dee Spector

Introduction

A dual-phase extraction (DPE) system has been installed at the Site to treat soil and groundwater that has been impacted by tetrachloroethylene (PCE) due to historical use of two adjoining tenant spaces for dry cleaning activities. The DPE system was first started on February 1, 2017. After troubleshooting several electrical and mechanical issues that were causing the system to automatically shut down, the system ran more or less continuously from June of 2017, with periodic shutdowns for maintenance and groundwater sampling, until February of 2018. At that time the system was shut down to accommodate tenant improvements to the former Prime Cleaners tenant space (being converted to a restaurant), which included improvements to the DPE groundwater effluent plumbing system. Upon completion of their inspection of tenant improvements, the Alderwood Water and Wastewater District informed ZGA that a permit with that entity was required. ZGA prepared the documentation, acquired the permit, and the system was restarted in October 2018. The system has run more or less continuously since that time, with periodic shutdowns for maintenance, repairs and groundwater sampling.

This groundwater monitoring report presents a summary of a groundwater sampling event completed in December 2019, which is the sixth sampling event since system startup. The scope of the monitoring study is generally to sample 10 groundwater wells located proximal to the former dry cleaning facilities on the southwest part of the Mill Creek Crossing Retail Center. Based on a prior history of non-detections in the other wells, only MW-3, MW-4, and MW-8 were sampled for this sampling event. Results from the monitoring study are used to assess trends in concentrations of volatile organic compounds (VOC), particularly tetrachloroethylene (PCE), and its degradational products trichloroethylene (TCE), 1,1-dichlorethene, cis-1,2-dichloroethylene (cis-1,2-DCE), and trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride. 1,1-dichlorethene and the end-member degradational product vinyl chloride have never been detected at the Site.

Table 1. Project Information

Site Name	Former Prime Cleaners
Site Location/Address	18001 Bothell-Everett Highway
VCP #	NW2571
Sampling Schedule	No fixed schedule
Sampling Dates (this report)	December 9, 2020
Wells Sounded	MW-3, MW-4, MW-8
Wells Sampled	MW-3, MW-4, MW-8
Next Sampling Event	March 2020

Groundwater Flow

Ten dedicated groundwater monitoring wells are present on or adjoining the Site (MW-1 through MW-10). We measured depth to groundwater in MW-3, MW-4, and MW-8 on December 9, 2019. Depth to groundwater was measured in relation to the north side of the PVC casing of each well. Generally, we observed a southerly trend to groundwater flow, consistent with previous sampling events. Relative groundwater elevations measured during previous sampling events and the event discussed in this report are presented in Table 2. A groundwater contour map for the December 2019 sampling event is attached in as Figure 1.

Table 2. Groundwater Elevations

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
MW-1	296.31	08-25-2010	25.22	271.09
		05-09-2011	21.18	275.13
		05-23-2012	22.73	273.58
		03-05-2014	23.95	272.36
		01-09-2017	22.85	273.46
		08-17-2017	24.87	271.44
		11-14-2017	24.66	271.65
		02-13-2018	21.65	274.66
		01-14-2019	23.78	272.53
		04-10-2019	24.04	272.27
MW-2	296.47	08-25-2010	25.58	270.89
		05-09-2011	21.61	274.86
		05-23-2012	22.97	273.50
		03-05-2014	24.28	272.19
		01-09-2017	23.14	273.33
		08-17-2017	25.57	270.90
		11-14-2017	25.15	271.32
		02-13-2018	22.00	274.47
		01-14-2019	24.05	272.42
		04-10-2019	24.40	272.07
MW-3	296.96	08-25-2010	26.17	270.79
		05-09-2011	22.21	274.75
		05-23-2012	23.49	273.47
		03-05-2014	24.88	272.08
		01-09-2017	23.66	273.30
		08-17-2017	26.10	270.86
		11-14-2017	25.69	271.27
		02-13-2018	22.45	274.51
		01-14-2019	24.53	272.43
		04-10-2019	24.92	272.04
		12-09-2019	26.53	270.43
MW-4	296.56	08-25-2010	25.76	270.80
		05-09-2011	21.77	274.79
		05-23-2012	23.10	273.46
		03-05-2014	24.47	272.09
		01-09-2017	23.21	273.35
		08-17-2017	25.67	270.89
		11-14-2017	25.32	271.24
		02-13-2018	22.10	274.46
		01-14-2019	24.16	272.40
		04-10-2019	24.53	272.03
		12-09-2019	26.12	270.44

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
MW-5	289.85	08-25-2010	18.71	271.14
		05-09-2011	14.96	274.89
		05-23-2012	16.18	273.67
		03-05-2014	17.49	272.36
		01-09-2017	17.36	272.49
		08-17-2017	18.71	271.14
		11-14-2017	18.51	271.34
		02-13-2018	15.52	274.33
		01-14-2019	17.59	272.26
		04-10-2019	17.64	272.21
MW-6	289.94	08-25-2010	18.91	271.03
		05-09-2011	15.06	274.88
		05-23-2012	16.30	273.64
		03-05-2014	17.54	272.40
		01-09-2017	16.44	273.50
		08-17-2017	18.81	271.13
		11-14-2017	18.71	271.23
		02-13-2018	15.53	274.41
		01-14-2019	17.64	272.30
		04-10-2019	17.66	272.28
MW-7	289.72	08-25-2010	19.14	270.58
		05-09-2011	15.22	274.50
		05-23-2012	16.41	273.31
		03-05-2014	17.85	271.87
		01-09-2017	16.61	273.11
		08-17-2017	19.11	270.61
		11-14-2017	18.68	271.04
		02-13-2018	15.51	274.21
		01-14-2019	17.52	272.20
		04-10-2019	17.84	271.88
MW-8	290.56	08-25-2010	Not Installed	
		05-09-2011	16.02	274.54
		05-23-2012	17.21	273.35
		03-05-2014	18.69	271.87
		01-09-2017	17.47	273.09
		08-17-2017	19.91	270.65
		11-14-2017	19.46	271.10
		02-13-2018	16.30	274.26
		01-14-2019	18.30	272.26
		04-10-2019	18.61	271.95
		12-09-2019	20.28	270.28

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
MW-9	298.90	08-25-2010	Not Installed	
		05-09-2011		
		05-23-2012		
		03-05-2014	26.30	272.60
		01-09-2017	25.10	273.80
		08-17-2017	27.55	271.35
		11-14-2017	27.52	271.38
		02-13-2018	24.35	274.55
		01-14-2019	26.43	272.47
		04-10-2019	26.73	272.17
MW-10	297.49	08-25-2010	Not Installed	
		05-09-2011		
		05-23-2012		
		03-05-2014	25.19	272.30
		01-12-2017	24.17	273.32
		08-18-2017	26.21	271.28
		11-14-2017	25.91	271.58
		02-13-2018	22.85	274.64
		01-14-2019	24.94	272.55
		04-10-2019	25.25	272.24

Groundwater Sampling and Analysis

The DPE system was shut down by a power outage no later December 2, 2019 and groundwater was sampled by ZGA on December 9, 2019. Each groundwater monitoring well was purged using a portable bladder pump equipped with a disposable bladder and dedicated tubing. The pump was lowered gently into the water column to a depth that corresponded with the highest concentration of PCE observed in that well in soil during the remedial investigations. If no PCE was measured in soil in a well, the pump was set at the mid-point of the screen. Flow rates were maintained at approximately 0.1 to 0.3 liters per minute. During the purging process, groundwater quality parameters Including temperature, electrical conductivity (EC), pH, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured at regular Intervals using a Horiba U-22 water-quality meter equipped with a flow cell. Purging at a given well was considered complete when: DO and turbidity were within +/- 10% variance; pH was within +/- 0.1 variance; EC was with +/- 3% variance; and ORP was within +/- 10 mV. All non-disposable pump components were decontaminated after sampling by rinsing with potable water, scrubbing in a solution of Alconox™ and potable water, and a final rinse with distilled water. Purge water and decontamination water were stored in a sealed, labeled 50-gallon drum at the Site and are awaiting classification and off-site disposal.

Groundwater samples were collected after parameter stabilization into laboratory supplied three glass 40-mL VOA vials preserved with hydrochloric acid. Sample containers were labeled with the well ID, the project name, the project number, the date, and the time of collection. Sample containers were immediately stored in a chilled cooler and were later transferred to a dedicated refrigerator in our office. Sample containers were transported to Field Environmental Instruments (FEI) in Woodinville in a chilled cooler under chain of custody procedures. FEI functioned as an intermediary to the analytical laboratory: Pace Analytical (formerly Environmental Science Corporation), a Washington State accredited laboratory. All samples were analyzed by Pace at their central laboratory, located in Tennessee.

The analytical results are summarized in Table 3, and are compared to cleanup levels defined in the Model Toxics Control Act (WAC 173-340).

Groundwater Sampling Analytical Results (April 2019)

The following results were drawn from the analysis of three groundwater samples. The executed chain-of-custody forms and laboratory analytical certificates are provided in Appendix B.

- PCE was detected at concentrations that exceeded the MTCA Method A cleanup level (5 µg/L) in two wells: MW-4 (42.9 ug/L and duplicate 40.9 µg/L), and MW-8 (17.5 µg/L).
- PCE was detected at concentrations above the laboratory reporting limit (RDL) but below the applicable cleanup level in one well: MW-3 (3.22 µg/L).
- MW-1, MW-2, MW-5, MW-6, MW-7,MW-9, and MW-10 were not sampled during this sampling event

No other VOC were reported above laboratory RDLs in MW-3, MW-4, and MW-8.

The reported concentrations of PCE has never exceeded the MTCA Method B Screening Level for Vapor Intrusion in MW-3, and has not exceeded the Screening Level in MW-8 for six consecutive sampling events. The Screening Level was not exceeded in two of the last three sampling events in MW-4.

Table 3. Groundwater Analytical Results

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
MW-1	06-17-09	**12**	ND<1	4.8	ND<1
	08-10-10	ND<1	**3.2**	**1.4**	ND<1
	05-10-11	**1.3**	ND<1	ND<1	ND<1
	05-23-12	ND<2	ND<2	ND<2	ND<2
	03-05-14	ND<2	ND<2	ND<2	ND<2
	01-11-17	**0.508**	ND<1	ND<1	ND<1
	08-18-17	**0.431**	ND<1	ND<1	ND<1
	11-15-17	**0.231**	ND<0.5	ND<0.5	ND<0.5
	02-13-18	**0.300**	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-2	06-16-09	ND<1	ND<1	ND<1	ND<1
	08-12-10	ND<1	ND<1	ND<1	ND<1
	05-10-11	ND<1	ND<1	ND<1	ND<1
	05-24-12	ND<2	ND<2	ND<2	ND<2
	03-05-14	ND<2	ND<2	ND<2	ND<2
	01-11-17	ND<1	ND<1	ND<1	ND<1
	08-17-17	ND<1	ND<1	ND<1	ND<1
	11-14-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-13-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-3	06-17-09	**6.6**	ND<1	ND<1	ND<1
	08-12-10	**6.4**	ND<1	ND<1	ND<1
	05-10-11	**9.3**	ND<1	ND<1	ND<1
	05-24-12	**15**	ND<2	ND<2	ND<2
	03-07-14	**5.6**	ND<2	ND<2	ND<2
	01-12-17	**9.28**	ND<1	ND<1	ND<1
	08-21-17	**2.81**	ND<1	ND<1	ND<1
	11-16-17	**4.96**	ND<0.5	ND<0.5	ND<0.5
	02-14-18	**6.78**	ND<0.5	ND<0.5	ND<0.5
	01-15-19	**4.44**	ND<0.5	ND<0.5	ND<0.5
	04-11-19	**2.51**	ND<0.5	ND<0.5	ND<0.5
	12-09-19	**3.22**	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		***5[A]***	***5[A]***	***16[B]***	***160[B]***
MTCA Method B Groundwater Screening Level for Vapor Intrusion		***24***	***1.5***	***16***	***160***

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
MW-4	10-31-07	**45**	ND<1	ND<1	ND<1
	06-16-09	**170**	ND<1	ND<1	ND<1
	08-12-10	**140**	ND<1	ND<1	ND<1
	05-10-11	**110**	ND<1	ND<1	ND<1
	05-24-12	**140**	ND<2	ND<2	ND<2
	03-07-14	**44**	ND<2	ND<2	ND<2
	01-13-17	**96.1**	ND<1	ND<1	ND<1
	01-13-17 DUP	**95.8**	ND<1	ND<1	ND<1
	08-21-17	**76.5**	ND<1	ND<1	ND<1
	11-16-17	**50.8**	ND<0.5	ND<0.5	ND<0.5
	11-16-17 DUP	**56.9**	ND<0.5	ND<0.5	ND<0.5
	02-14-18	**28.5**	ND<0.5	ND<0.5	ND<0.5
	01-15-19	**10.7**	ND<0.5	ND<0.5	ND<0.5
	01-15-19 DUP	**10.6**	ND<0.5	ND<0.5	ND<0.5
	04-11-19	**22.5**	ND<0.5	ND<0.5	ND<0.5
	04-11-19 DUP	**21.8**	ND<0.5	ND<0.5	ND<0.5
	12-09-19	**42.9**	ND<0.5	ND<0.5	ND<0.5
	12-09-19 DUP	**40.9**	ND<0.5	ND<0.5	ND<0.5
MW-5	08-10-10	**0.61**	ND<1	ND<1	ND<1
	05-09-11	**0.60**	ND<1	ND<1	ND<1
	03-06-14	ND<2	ND<2	ND<2	ND<2
	01-12-17	ND<1	ND<1	ND<1	ND<1
	08-18-17	**0.281**	ND<1	ND<1	ND<1
	11-15-17	**0.259**	ND<0.5	ND<0.5	ND<0.5
	02-13-18	**0.220**	ND<0.5	ND<0.5	ND<0.5
	01-15-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-6	08-10-10	ND<1	ND<1	ND<1	ND<1
	05-09-11	**2.2**	ND<1	ND<1	ND<1
	03-06-14	**4.7**	ND<2	ND<2	ND<2
	01-12-17	**1.07**	ND<1	ND<1	ND<1
	08-21-17	**0.674**	ND<1	ND<1	ND<1
	11-15-17	**2.37**	ND<0.5	ND<0.5	ND<0.5
	02-14-18	**3.21**	ND<0.5	ND<0.5	ND<0.5
	01-15-19	**2.04**	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		***5[A]***	***5[A]***	***16[B]***	***160[B]***
MTCA Method B Groundwater Screening Level for Vapor Intrusion		***24***	***1.5***	***16***	***160***

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
MW-7	08-10-10	**0.55**	ND<1	ND<1	ND<1
	05-09-11	ND<1	ND<1	ND<1	ND<1
	03-06-14	**8.0**	ND<2	ND<2	ND<2
	01-12-17	**0.948**	ND<1	ND<1	ND<1
	08-21-17	**1.49**	ND<1	ND<1	ND<1
	11-15-17	**3.8**	ND<0.5	ND<0.5	ND<0.5
	02-14-18	**1.93**	ND<0.5	ND<0.5	ND<0.5
	01-15-19	**3.88**	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-8	05-10-11	**22**	ND<1	ND<1	ND<1
	05-24-12	**36**	ND<2	ND<2	ND<2
	03-07-14	**13**	ND<2	ND<2	ND<2
	01-13-17	**26.4**	ND<1	ND<1	ND<1
	08-21-17	**25.1**	ND<1	ND<1	**0.250**
	11-16-17	**19.2**	ND<0.5	ND<0.5	ND<0.5
	02-14-18	**16.1**	ND<0.5	ND<0.5	ND<0.5
	02-14-18 DUP	**14.7**	ND<0.5	ND<0.5	ND<0.5
	01-15-19	**12.1**	ND<0.5	ND<0.5	ND<0.5
	04-11-19	**14.3**	ND<0.5	ND<0.5	ND<0.5
	12-09-19	**17.5**	ND<0.5	ND<0.5	ND<0.5
MW-9	03-05-14	ND<2	ND<2	ND<2	ND<2
	01-11-17	ND<1	ND<1	ND<1	ND<1
	08-18-17	ND<1	ND<1	ND<1	ND<1
	11-14-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-13-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-10	03-06-14	ND<2	ND<2	ND<2	ND<2
	01-12-17	ND<1	ND<1	ND<1	ND<1
	08-18-17	ND<1	ND<1	ND<1	ND<1
	11-14-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-13-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		***5[A]***	***5[A]***	***16[B]***	***160[B]***
MTCA Method B Groundwater Screening Level for Vapor Intrusion		***24***	***1.5***	***16***	***160***

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
Equipment Blank	08-12-10	ND<1	ND<1	ND<1	ND<1
	01-13-17	ND<1	ND<1	ND<1	ND<1
	11-16-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-14-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-15-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
DPE Groundwater Effluent	03-08-17	0.748	ND<1	ND<1	ND<1
	11-12-17	0.286	ND<0.5	ND<0.5	ND<0.5
	01-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05-16-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		***5[A]***	***5[A]***	***16[B]***	***160[B]***
MTCA Method B Groundwater Screening Level for Vapor Intrusion		***24***	***1.5***	***16***	***160***

ug/L: micrograms per liter (parts-per-billion); ND<: Not detected above indicated laboratory reporting detection limit; Shaded values exceed MTCA Method A cleanup levels. [A]: Method A cleanup level. [B]: Method B cleanup level. Please refer to Appendix C for the complete set of analytes and analytical results for VOC.

Indoor Air Sampling and Analysis (January 2020)

Air Sampling Narrative

During the January 2020 sampling event, all three tenant spaces were open for businesses, and the Former Prime Cleaners was fully converted into a restaurant. The north and south doors at all three tenant spaces were closed. The indoor air canister in the Money Tree tenant space was placed on a refrigerator at an elevation of about seven feet in a back room (south part of the tenant space). The indoor air canister in the Former Prime Cleaners was placed at an elevation of about seven feet on a cooler in the dining area (central part of the tenant space). The indoor air canister at the Osaka Grill was placed at an elevation of about seven feet on a cooler in the dining area (central part of the tenant space). The canister for ambient outdoor air was placed on the roof of the Conex box that houses the dual-phase extraction (DPE) system in the alley south of the tenant spaces.

All four canisters were equipped with 8-hour regulators. The samples were analyzed for a subset of VOC, including tetrachloroethylene (PCE) and trichloroethylene (TCE), by Friedman & Bruya (Seattle, Washington) using the EPA TO-15 Method. The analytical results are summarized in Table 1 and the laboratory reports are attached in Appendix B. Contaminant concentrations in indoor air have been corrected for concentrations in ambient air, if applicable. The Commercial Method B calculation is illustrated on Table 5.

Table 4. Summarized Ambient and Indoor Air Analytical Results

Sampling Location	Date	PCE	TCE	EDC
Ambient Air	06-03-14	<0.23	<0.18	<0.14
	08-22-18	<0.68	**0.28**	**0.24**
	01-14-19	<6.8	<0.27	**0.11**
	04-18-19	<6.8	<0.27	**0.089**
	01-24-20	<6.8	<0.27	**0.069**
Former Prime Cleaners	06-03-14	0.51	**0.39**	<0.13
	08-22-18	0.73	<0.27	<0.04
	01-14-19	<6.8	<0.27	**0.01**
	04-18-19	<6.8	<0.27	**0.008**
	01-24-20	<6.8	<0.27	**0.008**
Money Tree	06-03-14	<1.1	<0.88	<0.66
	08-22-18	<0.68	**0.82**	0.00
	01-14-19	<6.8	<0.27	0.00
	04-18-19	<6.8	<0.27	**0.004**
	01-24-20	<6.8	<0.27	**0.004**
Osaka Grill	06-03-14	0.48	0.07	<0.28
	08-22-18	<0.68	<0.27	0.00
	01-14-19	<6.8	<0.27	**0.02**
	04-18-19	<6.8	<0.27	**0.021**
	01-24-20	<6.8	<0.27	**0.041**
Default MTCA Method B Indoor Air Cleanup Level		***9.62***	***0.37***	***0.09***
Commercial MTCA Method B Indoor Air Cleanup Level		***32.05***	***1.24***	***NC***

The bold values exceed the laboratory reporting limit. NC, not calculated. 0.00, the ambient concentration exceeds the indoor air concentration.

PCE and TCE were not reported above the laboratory reporting limit in ambient air or in any of the three tenant spaces during the December 2019 sampling event. This marks the third consecutive sampling event wherein PCE and TCE were not reported above the laboratory reporting limit.

Table 5. Modified Method B Air Cleanup Level (Equation 750-2)

Equation 750-2 for Carcinogens			Tetrachloroethylene		Trichloroethylene	
Parameters[1]		**Units**	**Default Method B[2]**	**Modified Method B[3]**	**Default Method B[2]**	**Modified Method B[3]**
Carcinogenic Risk	RISK	unitless	1.00E-06	1.00E-06	1.00E-06	1.00E-06
Average Body Weight	ABW	kg	70	70	70	70
Averaging Time	AT	years	75	75	75	75
Unit Conversion Factor	UCF	ug/mg	1,000	1,000	1,000	1,000
Carcinogenic Potency Factor	CPF	kg-day/mg	9.10E-04	9.10E-04	0.0235	0.0235
Breathing Rate	BR	m^3/day	20	20	20	20
Inhalation Adsorption Rate	ABS	unitless	1	1	1	1
Exposure Duration	ED	years	30	30	30	30
Exposure Frequency	EF	unitless	1	0.3	1	0.3
Method B Air Cleanup Level		**ug/m^3**	**9.62**	**32.05**	**0.37**	**1.24**

[1]Parameter values are derived from MTCA Equation 750-2 or the CLARC database (https://fortress.wa.gove/ecy/clarc/clarkdatatables.aspx)
[2]Default Method B cleanup level calculation using default parameters reflective of a residential setting
[3]Commercial Method B cleanup level calculation using an exposure frequency reflective of a commercial setting.

Method B air cleanup level = RISK x ABW x AT x UCF / CPF x BR x ABS x ED X EF

Exposure Frequency
Default: 24 hours/day for 365 days = 8,760 hours/year
Modified: 10 hours/day for 250 days = 2,500 hours/year

Modified Exposure Frequency = 2,500/8,760 = 0.285. However, in accordance with Ecology's Implementation Memorandum No. 21, dated November 15, 2018 (see Question No. 17 in the memorandum), we have used an exposure frequency value of 0.3 for the Modified Method B calculations.

Conclusions

ZGA completed a groundwater monitoring sampling event in December 2019. Historically, PCE has exceeded MTCA Method A cleanup levels in MW-3, MW-4 and MW-8. The concentration of PCE fell to a concentration below the Method A cleanup level in MW-3 for the third consecutive quarter, after slightly exceeding the cleanup level in the February 2018 sampling event. The concentrations of PCE in MW-4 and MW-8 remain above MTCA Method A cleanup levels.

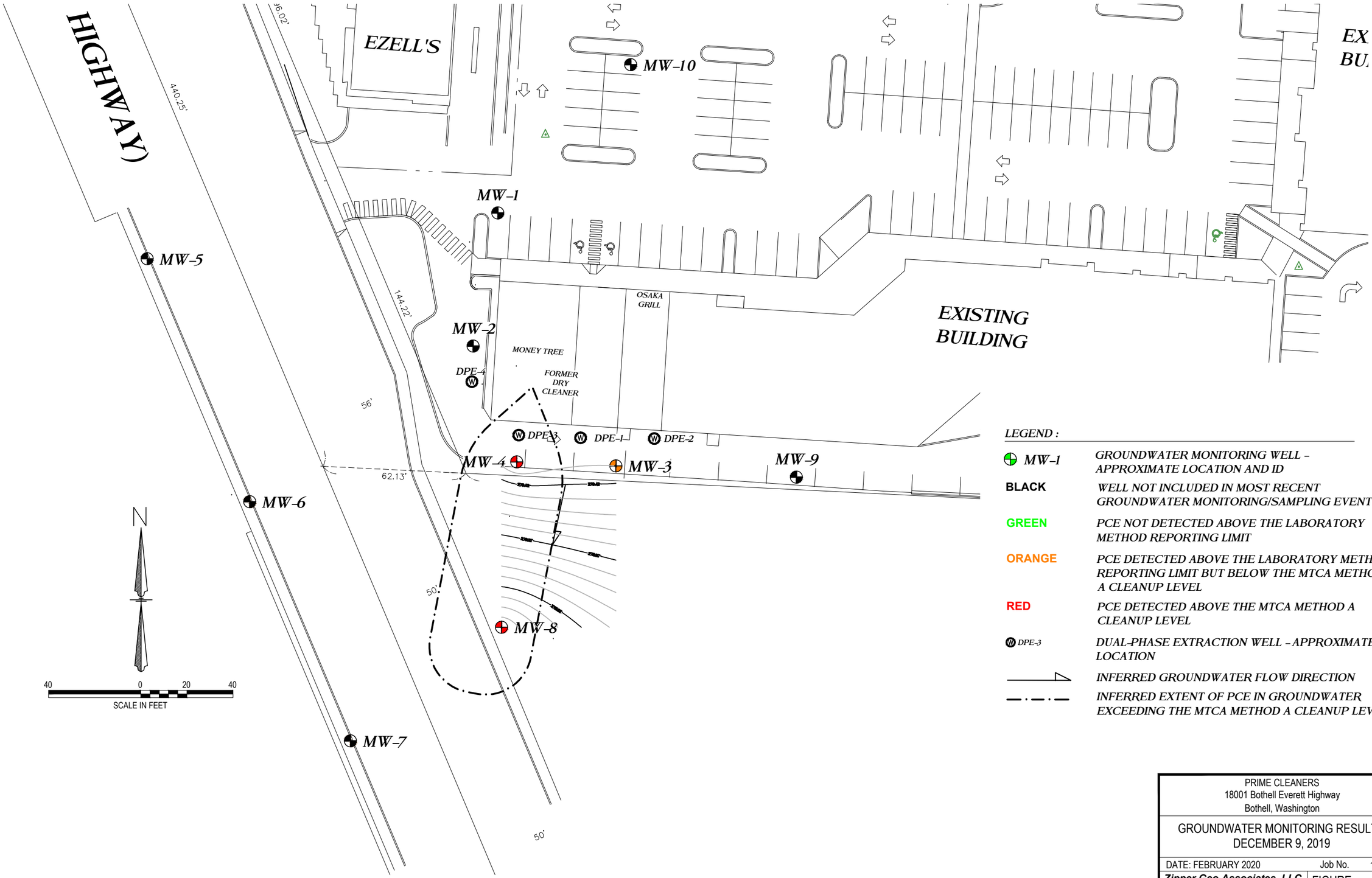
The reported concentrations of PCE has never exceeded the MTCA Method B Screening Level for Vapor Intrusion in MW-3, and has not exceed the Screening Level in MW-8 for six consecutive sampling events. The Screening Level was not exceeded in two of the last three sampling events in MW-4.

ZGA completed ambient and indoor air sampling in January 2020. PCE and TCE were not reported above laboratory reporting limits in ambient air or in three indoor air samples for the third consecutive sampling event.

ZGA intends to transmit this report to Ecology, along with a request for a “No Further Action” determination with an Environmental Covenant.

APPENDIX A

Figures



LEGEND :

MW-1	GROUNDWATER MONITORING WELL – APPROXIMATE LOCATION AND ID
BLACK	WELL NOT INCLUDED IN MOST RECENT GROUNDWATER MONITORING/SAMPLING EVENT
GREEN	PCE NOT DETECTED ABOVE THE LABORATORY METHOD REPORTING LIMIT
ORANGE	PCE DETECTED ABOVE THE LABORATORY METHOD REPORTING LIMIT BUT BELOW THE MTCA METHOD A CLEANUP LEVEL
RED	PCE DETECTED ABOVE THE MTCA METHOD A CLEANUP LEVEL
DPE-3	DUAL-PHASE EXTRACTION WELL – APPROXIMATE LOCATION
	INFERRED GROUNDWATER FLOW DIRECTION
	INFERRED EXTENT OF PCE IN GROUNDWATER EXCEEDING THE MTCA METHOD A CLEANUP LEVEL

CONTOUR INTERVAL = 0.01 FEET

PRIME CLEANERS
18001 Bothell Everett Highway
Bothell, Washington

GROUNDWATER MONITORING RESULTS
DECEMBER 9, 2019

DATE: FEBRUARY 2020 Job No. 1001.25

Zipper Geo Associates, LLC
19019 36th Ave. W.,Suite E
Lynnwood, WA

FIGURE 1
SHT. 1 of 1

Appendix B

Laboratory Reports

ANALYTICAL REPORT

December 16, 2019

Zipper Geo Associates - Lynnwood, WA

Sample Delivery Group:	L1169666
Samples Received:	12/11/2019
Project Number:	1001.25
Description:	Prime Cleaners

Report To: Jon Einarsen
19019 36th Ave. W.
Ste. E
Lynnwood, WA 98036

Entire Report Reviewed By:

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

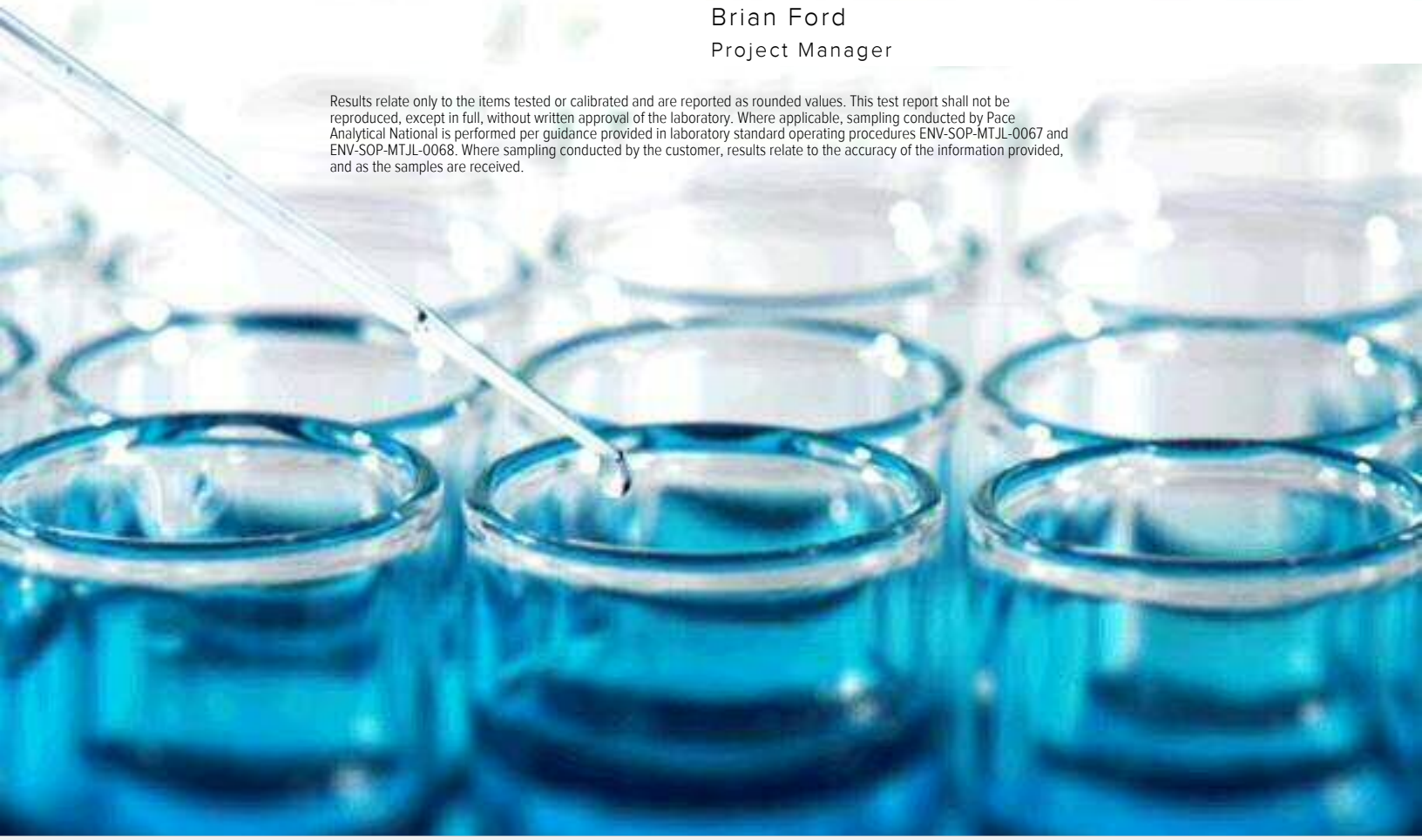


TABLE OF CONTENTS

Volatile Organic Compounds (GC/MS) by Method 8260D WG1396153 1 12/13/19 18:58 12/13/19 18:58 BMB Mt. Juliet, TN

MW-8 L1169666-03 GW

Collected by: K. Newman
Collected date/time: 12/09/19 15:00
Received date/time: 12/11/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1396153	1	12/13/19 19:19	12/13/19 19:19	BMB	Mt. Juliet, TN

DUPLICATE(MW-00) L1169666-04 GW

Collected by: K. Newman
Collected date/time: 12/09/19 00:00
Received date/time: 12/11/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1396153	1	12/13/19 20:11	12/13/19 20:11	BMB	Mt. Juliet, TN

EQUIPMENT BLANK L1169666-05 GW

Collected by: K. Newman
Collected date/time: 12/09/19 15:10
Received date/time: 12/11/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1396153	1	12/13/19 14:55	12/13/19 14:55	BMB	Mt. Juliet, TN

Brian Ford
Project Manager

n-Butylbenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
sec-Butylbenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
tert-Butylbenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
Carbon disulfide	ND		0.500	1	12/13/2019 18:38	WG1396153
Carbon tetrachloride	ND		0.500	1	12/13/2019 18:38	WG1396153
Chlorobenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
Chlorodibromomethane	ND		0.500	1	12/13/2019 18:38	WG1396153
Chloroethane	ND		2.50	1	12/13/2019 18:38	WG1396153
Chloroform	ND		0.500	1	12/13/2019 18:38	WG1396153
Chloromethane	ND		1.25	1	12/13/2019 18:38	WG1396153
2-Chlorotoluene	ND		0.500	1	12/13/2019 18:38	WG1396153
4-Chlorotoluene	ND		0.500	1	12/13/2019 18:38	WG1396153
1,2-Dibromo-3-Chloropropane	ND		2.50	1	12/13/2019 18:38	WG1396153
1,2-Dibromoethane	ND		0.500	1	12/13/2019 18:38	WG1396153
Dibromomethane	ND		0.500	1	12/13/2019 18:38	WG1396153
1,2-Dichlorobenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
1,3-Dichlorobenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
1,4-Dichlorobenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
Dichlorodifluoromethane	ND		2.50	1	12/13/2019 18:38	WG1396153
1,1-Dichloroethane	ND		0.500	1	12/13/2019 18:38	WG1396153
1,2-Dichloroethane	ND		0.500	1	12/13/2019 18:38	WG1396153
1,1-Dichloroethene	ND		0.500	1	12/13/2019 18:38	WG1396153
cis-1,2-Dichloroethene	ND		0.500	1	12/13/2019 18:38	WG1396153
trans-1,2-Dichloroethene	ND		0.500	1	12/13/2019 18:38	WG1396153
1,2-Dichloropropane	ND		0.500	1	12/13/2019 18:38	WG1396153
1,1-Dichloropropene	ND		0.500	1	12/13/2019 18:38	WG1396153
1,3-Dichloropropane	ND		1.00	1	12/13/2019 18:38	WG1396153
cis-1,3-Dichloropropene	ND		0.500	1	12/13/2019 18:38	WG1396153
trans-1,3-Dichloropropene	ND		0.500	1	12/13/2019 18:38	WG1396153
trans-1,4-Dichloro-2-butene	ND	J0	5.00	1	12/13/2019 18:38	WG1396153
2,2-Dichloropropane	ND		0.500	1	12/13/2019 18:38	WG1396153
Di-isopropyl ether	ND		0.500	1	12/13/2019 18:38	WG1396153
Ethylbenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
Hexachloro-1,3-butadiene	ND		1.00	1	12/13/2019 18:38	WG1396153
2-Hexanone	ND		5.00	1	12/13/2019 18:38	WG1396153
n-Hexane	ND		5.00	1	12/13/2019 18:38	WG1396153
Iodomethane	ND		10.0	1	12/13/2019 18:38	WG1396153
Isopropylbenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
p-Isopropyltoluene	ND		0.500	1	12/13/2019 18:38	WG1396153
2-Butanone (MEK)	ND		5.00	1	12/13/2019 18:38	WG1396153
Methylene Chloride	ND		2.50	1	12/13/2019 18:38	WG1396153
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	12/13/2019 18:38	WG1396153
Methyl tert-butyl ether	ND		0.500	1	12/13/2019 18:38	WG1396153
Naphthalene	ND		2.50	1	12/13/2019 18:38	WG1396153
n-Propylbenzene	ND		0.500	1	12/13/2019 18:38	WG1396153
Styrene	ND		0.500	1	12/13/2019 18:38	WG1396153
1,1,1,2-Tetrachloroethane	ND		0.500	1	12/13/2019 18:38	WG1396153
1,1,2,2-Tetrachloroethane	ND		0.500	1	12/13/2019 18:38	WG1396153

Trichlorofluoromethane	ND	2.50	1	12/13/2019 18:38	WG1396153
1,2,3-Trichloropropane	ND	2.50	1	12/13/2019 18:38	WG1396153
1,2,4-Trimethylbenzene	ND	0.500	1	12/13/2019 18:38	WG1396153
1,2,3-Trimethylbenzene	ND	0.500	1	12/13/2019 18:38	WG1396153
1,3,5-Trimethylbenzene	ND	0.500	1	12/13/2019 18:38	WG1396153
Vinyl acetate	ND	5.00	1	12/13/2019 18:38	WG1396153
Vinyl chloride	ND	0.500	1	12/13/2019 18:38	WG1396153
Xylenes, Total	ND	1.50	1	12/13/2019 18:38	WG1396153
(S) Toluene-d8	*107*	*80.0-120*		*12/13/2019 18:38*	WG1396153
(S) 4-Bromofluorobenzene	*103*	*77.0-126*		*12/13/2019 18:38*	WG1396153
(S) 1,2-Dichloroethane-d4	*102*	*70.0-130*		*12/13/2019 18:38*	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		25.0	1	12/13/2019 18:58	WG1396153
Acrylonitrile	ND		5.00	1	12/13/2019 18:58	WG1396153
Benzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Bromobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Bromodichloromethane	ND		0.500	1	12/13/2019 18:58	WG1396153
Bromochloromethane	ND		0.500	1	12/13/2019 18:58	WG1396153
Bromoform	ND		0.500	1	12/13/2019 18:58	WG1396153
Bromomethane	ND		2.50	1	12/13/2019 18:58	WG1396153
n-Butylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
sec-Butylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
tert-Butylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Carbon disulfide	ND		0.500	1	12/13/2019 18:58	WG1396153
Carbon tetrachloride	ND		0.500	1	12/13/2019 18:58	WG1396153
Chlorobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Chlorodibromomethane	ND		0.500	1	12/13/2019 18:58	WG1396153
Chloroethane	ND		2.50	1	12/13/2019 18:58	WG1396153
Chloroform	ND		0.500	1	12/13/2019 18:58	WG1396153
Chloromethane	ND		1.25	1	12/13/2019 18:58	WG1396153
2-Chlorotoluene	ND		0.500	1	12/13/2019 18:58	WG1396153
4-Chlorotoluene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2-Dibromo-3-Chloropropane	ND		2.50	1	12/13/2019 18:58	WG1396153
1,2-Dibromoethane	ND		0.500	1	12/13/2019 18:58	WG1396153
Dibromomethane	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2-Dichlorobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,3-Dichlorobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,4-Dichlorobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Dichlorodifluoromethane	ND		2.50	1	12/13/2019 18:58	WG1396153
1,1-Dichloroethane	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2-Dichloroethane	ND		0.500	1	12/13/2019 18:58	WG1396153
1,1-Dichloroethene	ND		0.500	1	12/13/2019 18:58	WG1396153
cis-1,2-Dichloroethene	ND		0.500	1	12/13/2019 18:58	WG1396153
trans-1,2-Dichloroethene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2-Dichloropropane	ND		0.500	1	12/13/2019 18:58	WG1396153
1,1-Dichloropropene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,3-Dichloropropane	ND		1.00	1	12/13/2019 18:58	WG1396153
cis-1,3-Dichloropropene	ND		0.500	1	12/13/2019 18:58	WG1396153
trans-1,3-Dichloropropene	ND		0.500	1	12/13/2019 18:58	WG1396153
trans-1,4-Dichloro-2-butene	ND	J0	5.00	1	12/13/2019 18:58	WG1396153
2,2-Dichloropropane	ND		0.500	1	12/13/2019 18:58	WG1396153
Di-isopropyl ether	ND		0.500	1	12/13/2019 18:58	WG1396153
Ethylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Hexachloro-1,3-butadiene	ND		1.00	1	12/13/2019 18:58	WG1396153
2-Hexanone	ND		5.00	1	12/13/2019 18:58	WG1396153
n-Hexane	ND		5.00	1	12/13/2019 18:58	WG1396153
Iodomethane	ND		10.0	1	12/13/2019 18:58	WG1396153
Isopropylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
p-Isopropyltoluene	ND		0.500	1	12/13/2019 18:58	WG1396153
2-Butanone (MEK)	ND		5.00	1	12/13/2019 18:58	WG1396153
Methylene Chloride	ND		2.50	1	12/13/2019 18:58	WG1396153
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	12/13/2019 18:58	WG1396153
Methyl tert-butyl ether	ND		0.500	1	12/13/2019 18:58	WG1396153
Naphthalene	ND		2.50	1	12/13/2019 18:58	WG1396153
n-Propylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Styrene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,1,1,2-Tetrachloroethane	ND		0.500	1	12/13/2019 18:58	WG1396153
1,1,2,2-Tetrachloroethane	ND		0.500	1	12/13/2019 18:58	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.500	1	12/13/2019 18:58	WG1396153
Tetrachloroethene	42.9		0.500	1	12/13/2019 18:58	WG1396153
Toluene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2,3-Trichlorobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2,4-Trichlorobenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,1,1-Trichloroethane	ND		0.500	1	12/13/2019 18:58	WG1396153
1,1,2-Trichloroethane	ND		0.500	1	12/13/2019 18:58	WG1396153
Trichloroethene	ND		0.500	1	12/13/2019 18:58	WG1396153
Trichlorofluoromethane	ND		2.50	1	12/13/2019 18:58	WG1396153
1,2,3-Trichloropropane	ND		2.50	1	12/13/2019 18:58	WG1396153
1,2,4-Trimethylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,2,3-Trimethylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
1,3,5-Trimethylbenzene	ND		0.500	1	12/13/2019 18:58	WG1396153
Vinyl acetate	ND		5.00	1	12/13/2019 18:58	WG1396153
Vinyl chloride	ND		0.500	1	12/13/2019 18:58	WG1396153
Xylenes, Total	ND		1.50	1	12/13/2019 18:58	WG1396153
(S) Toluene-d8	*106*		*80.0-120*		*12/13/2019 18:58*	WG1396153
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*12/13/2019 18:58*	WG1396153
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*12/13/2019 18:58*	WG1396153

n-Butylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
sec-Butylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
tert-Butylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
Carbon disulfide	ND		0.500	1	12/13/2019 19:19	WG1396153
Carbon tetrachloride	ND		0.500	1	12/13/2019 19:19	WG1396153
Chlorobenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
Chlorodibromomethane	ND		0.500	1	12/13/2019 19:19	WG1396153
Chloroethane	ND		2.50	1	12/13/2019 19:19	WG1396153
Chloroform	ND		0.500	1	12/13/2019 19:19	WG1396153
Chloromethane	ND		1.25	1	12/13/2019 19:19	WG1396153
2-Chlorotoluene	ND		0.500	1	12/13/2019 19:19	WG1396153
4-Chlorotoluene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2-Dibromo-3-Chloropropane	ND		2.50	1	12/13/2019 19:19	WG1396153
1,2-Dibromoethane	ND		0.500	1	12/13/2019 19:19	WG1396153
Dibromomethane	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2-Dichlorobenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,3-Dichlorobenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,4-Dichlorobenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
Dichlorodifluoromethane	ND		2.50	1	12/13/2019 19:19	WG1396153
1,1-Dichloroethane	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2-Dichloroethane	ND		0.500	1	12/13/2019 19:19	WG1396153
1,1-Dichloroethene	ND		0.500	1	12/13/2019 19:19	WG1396153
cis-1,2-Dichloroethene	ND		0.500	1	12/13/2019 19:19	WG1396153
trans-1,2-Dichloroethene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2-Dichloropropane	ND		0.500	1	12/13/2019 19:19	WG1396153
1,1-Dichloropropene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,3-Dichloropropane	ND		1.00	1	12/13/2019 19:19	WG1396153
cis-1,3-Dichloropropene	ND		0.500	1	12/13/2019 19:19	WG1396153
trans-1,3-Dichloropropene	ND		0.500	1	12/13/2019 19:19	WG1396153
trans-1,4-Dichloro-2-butene	ND	J0	5.00	1	12/13/2019 19:19	WG1396153
2,2-Dichloropropane	ND		0.500	1	12/13/2019 19:19	WG1396153
Di-isopropyl ether	ND		0.500	1	12/13/2019 19:19	WG1396153
Ethylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
Hexachloro-1,3-butadiene	ND		1.00	1	12/13/2019 19:19	WG1396153
2-Hexanone	ND		5.00	1	12/13/2019 19:19	WG1396153
n-Hexane	ND		5.00	1	12/13/2019 19:19	WG1396153
Iodomethane	ND		10.0	1	12/13/2019 19:19	WG1396153
Isopropylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
p-Isopropyltoluene	ND		0.500	1	12/13/2019 19:19	WG1396153
2-Butanone (MEK)	ND		5.00	1	12/13/2019 19:19	WG1396153
Methylene Chloride	ND		2.50	1	12/13/2019 19:19	WG1396153
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	12/13/2019 19:19	WG1396153
Methyl tert-butyl ether	ND		0.500	1	12/13/2019 19:19	WG1396153
Naphthalene	ND		2.50	1	12/13/2019 19:19	WG1396153
n-Propylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
Styrene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,1,1,2-Tetrachloroethane	ND		0.500	1	12/13/2019 19:19	WG1396153
1,1,2,2-Tetrachloroethane	ND		0.500	1	12/13/2019 19:19	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.500	1	12/13/2019 19:19	WG1396153
Tetrachloroethene	17.5		0.500	1	12/13/2019 19:19	WG1396153
Toluene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2,3-Trichlorobenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2,4-Trichlorobenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,1,1-Trichloroethane	ND		0.500	1	12/13/2019 19:19	WG1396153
1,1,2-Trichloroethane	ND		0.500	1	12/13/2019 19:19	WG1396153
Trichloroethene	ND		0.500	1	12/13/2019 19:19	WG1396153
Trichlorofluoromethane	ND		2.50	1	12/13/2019 19:19	WG1396153
1,2,3-Trichloropropane	ND		2.50	1	12/13/2019 19:19	WG1396153
1,2,4-Trimethylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,2,3-Trimethylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
1,3,5-Trimethylbenzene	ND		0.500	1	12/13/2019 19:19	WG1396153
Vinyl acetate	ND		5.00	1	12/13/2019 19:19	WG1396153
Vinyl chloride	ND		0.500	1	12/13/2019 19:19	WG1396153
Xylenes, Total	ND		1.50	1	12/13/2019 19:19	WG1396153
(S) Toluene-d8	*106*		*80.0-120*		*12/13/2019 19:19*	WG1396153
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*12/13/2019 19:19*	WG1396153
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*12/13/2019 19:19*	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		25.0	1	12/13/2019 20:11	WG1396153
Acrylonitrile	ND		5.00	1	12/13/2019 20:11	WG1396153
Benzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Bromobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Bromodichloromethane	ND		0.500	1	12/13/2019 20:11	WG1396153
Bromochloromethane	ND		0.500	1	12/13/2019 20:11	WG1396153
Bromoform	ND		0.500	1	12/13/2019 20:11	WG1396153
Bromomethane	ND		2.50	1	12/13/2019 20:11	WG1396153
n-Butylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
sec-Butylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
tert-Butylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Carbon disulfide	ND		0.500	1	12/13/2019 20:11	WG1396153
Carbon tetrachloride	ND		0.500	1	12/13/2019 20:11	WG1396153
Chlorobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Chlorodibromomethane	ND		0.500	1	12/13/2019 20:11	WG1396153
Chloroethane	ND		2.50	1	12/13/2019 20:11	WG1396153
Chloroform	ND		0.500	1	12/13/2019 20:11	WG1396153
Chloromethane	ND		1.25	1	12/13/2019 20:11	WG1396153
2-Chlorotoluene	ND		0.500	1	12/13/2019 20:11	WG1396153
4-Chlorotoluene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2-Dibromo-3-Chloropropane	ND		2.50	1	12/13/2019 20:11	WG1396153
1,2-Dibromoethane	ND		0.500	1	12/13/2019 20:11	WG1396153
Dibromomethane	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2-Dichlorobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,3-Dichlorobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,4-Dichlorobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Dichlorodifluoromethane	ND		2.50	1	12/13/2019 20:11	WG1396153
1,1-Dichloroethane	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2-Dichloroethane	ND		0.500	1	12/13/2019 20:11	WG1396153
1,1-Dichloroethene	ND		0.500	1	12/13/2019 20:11	WG1396153
cis-1,2-Dichloroethene	ND		0.500	1	12/13/2019 20:11	WG1396153
trans-1,2-Dichloroethene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2-Dichloropropane	ND		0.500	1	12/13/2019 20:11	WG1396153
1,1-Dichloropropene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,3-Dichloropropane	ND		1.00	1	12/13/2019 20:11	WG1396153
cis-1,3-Dichloropropene	ND		0.500	1	12/13/2019 20:11	WG1396153
trans-1,3-Dichloropropene	ND		0.500	1	12/13/2019 20:11	WG1396153
trans-1,4-Dichloro-2-butene	ND	J0	5.00	1	12/13/2019 20:11	WG1396153
2,2-Dichloropropane	ND		0.500	1	12/13/2019 20:11	WG1396153
Di-isopropyl ether	ND		0.500	1	12/13/2019 20:11	WG1396153
Ethylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Hexachloro-1,3-butadiene	ND		1.00	1	12/13/2019 20:11	WG1396153
2-Hexanone	ND		5.00	1	12/13/2019 20:11	WG1396153
n-Hexane	ND		5.00	1	12/13/2019 20:11	WG1396153
Iodomethane	ND		10.0	1	12/13/2019 20:11	WG1396153
Isopropylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
p-Isopropyltoluene	ND		0.500	1	12/13/2019 20:11	WG1396153
2-Butanone (MEK)	ND		5.00	1	12/13/2019 20:11	WG1396153
Methylene Chloride	ND		2.50	1	12/13/2019 20:11	WG1396153
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	12/13/2019 20:11	WG1396153
Methyl tert-butyl ether	ND		0.500	1	12/13/2019 20:11	WG1396153
Naphthalene	ND		2.50	1	12/13/2019 20:11	WG1396153
n-Propylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Styrene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,1,1,2-Tetrachloroethane	ND		0.500	1	12/13/2019 20:11	WG1396153
1,1,2,2-Tetrachloroethane	ND		0.500	1	12/13/2019 20:11	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.500	1	12/13/2019 20:11	WG1396153
Tetrachloroethene	40.9		0.500	1	12/13/2019 20:11	WG1396153
Toluene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2,3-Trichlorobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2,4-Trichlorobenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,1,1-Trichloroethane	ND		0.500	1	12/13/2019 20:11	WG1396153
1,1,2-Trichloroethane	ND		0.500	1	12/13/2019 20:11	WG1396153
Trichloroethene	ND		0.500	1	12/13/2019 20:11	WG1396153
Trichlorofluoromethane	ND		2.50	1	12/13/2019 20:11	WG1396153
1,2,3-Trichloropropane	ND		2.50	1	12/13/2019 20:11	WG1396153
1,2,4-Trimethylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,2,3-Trimethylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
1,3,5-Trimethylbenzene	ND		0.500	1	12/13/2019 20:11	WG1396153
Vinyl acetate	ND		5.00	1	12/13/2019 20:11	WG1396153
Vinyl chloride	ND		0.500	1	12/13/2019 20:11	WG1396153
Xylenes, Total	ND		1.50	1	12/13/2019 20:11	WG1396153
(S) Toluene-d8	*106*		*80.0-120*		*12/13/2019 20:11*	WG1396153
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*12/13/2019 20:11*	WG1396153
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*12/13/2019 20:11*	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		25.0	1	12/13/2019 14:55	WG1396153
Acrylonitrile	ND		5.00	1	12/13/2019 14:55	WG1396153
Benzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Bromobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Bromodichloromethane	ND		0.500	1	12/13/2019 14:55	WG1396153
Bromochloromethane	ND		0.500	1	12/13/2019 14:55	WG1396153
Bromoform	ND		0.500	1	12/13/2019 14:55	WG1396153
Bromomethane	ND		2.50	1	12/13/2019 14:55	WG1396153
n-Butylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
sec-Butylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
tert-Butylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Carbon disulfide	ND		0.500	1	12/13/2019 14:55	WG1396153
Carbon tetrachloride	ND		0.500	1	12/13/2019 14:55	WG1396153
Chlorobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Chlorodibromomethane	ND		0.500	1	12/13/2019 14:55	WG1396153
Chloroethane	ND		2.50	1	12/13/2019 14:55	WG1396153
Chloroform	ND		0.500	1	12/13/2019 14:55	WG1396153
Chloromethane	ND		1.25	1	12/13/2019 14:55	WG1396153
2-Chlorotoluene	ND		0.500	1	12/13/2019 14:55	WG1396153
4-Chlorotoluene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2-Dibromo-3-Chloropropane	ND		2.50	1	12/13/2019 14:55	WG1396153
1,2-Dibromoethane	ND		0.500	1	12/13/2019 14:55	WG1396153
Dibromomethane	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2-Dichlorobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,3-Dichlorobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,4-Dichlorobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Dichlorodifluoromethane	ND		2.50	1	12/13/2019 14:55	WG1396153
1,1-Dichloroethane	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2-Dichloroethane	ND		0.500	1	12/13/2019 14:55	WG1396153
1,1-Dichloroethene	ND		0.500	1	12/13/2019 14:55	WG1396153
cis-1,2-Dichloroethene	ND		0.500	1	12/13/2019 14:55	WG1396153
trans-1,2-Dichloroethene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2-Dichloropropane	ND		0.500	1	12/13/2019 14:55	WG1396153
1,1-Dichloropropene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,3-Dichloropropane	ND		1.00	1	12/13/2019 14:55	WG1396153
cis-1,3-Dichloropropene	ND		0.500	1	12/13/2019 14:55	WG1396153
trans-1,3-Dichloropropene	ND		0.500	1	12/13/2019 14:55	WG1396153
trans-1,4-Dichloro-2-butene	ND	J0	5.00	1	12/13/2019 14:55	WG1396153
2,2-Dichloropropane	ND		0.500	1	12/13/2019 14:55	WG1396153
Di-isopropyl ether	ND		0.500	1	12/13/2019 14:55	WG1396153
Ethylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Hexachloro-1,3-butadiene	ND		1.00	1	12/13/2019 14:55	WG1396153
2-Hexanone	ND		5.00	1	12/13/2019 14:55	WG1396153
n-Hexane	ND		5.00	1	12/13/2019 14:55	WG1396153
Iodomethane	ND		10.0	1	12/13/2019 14:55	WG1396153
Isopropylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
p-Isopropyltoluene	ND		0.500	1	12/13/2019 14:55	WG1396153
2-Butanone (MEK)	ND		5.00	1	12/13/2019 14:55	WG1396153
Methylene Chloride	ND		2.50	1	12/13/2019 14:55	WG1396153
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	12/13/2019 14:55	WG1396153
Methyl tert-butyl ether	ND		0.500	1	12/13/2019 14:55	WG1396153
Naphthalene	ND		2.50	1	12/13/2019 14:55	WG1396153
n-Propylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Styrene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,1,1,2-Tetrachloroethane	ND		0.500	1	12/13/2019 14:55	WG1396153
1,1,2,2-Tetrachloroethane	ND		0.500	1	12/13/2019 14:55	WG1396153

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.500	1	12/13/2019 14:55	WG1396153
Tetrachloroethene	ND		0.500	1	12/13/2019 14:55	WG1396153
Toluene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2,3-Trichlorobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2,4-Trichlorobenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,1,1-Trichloroethane	ND		0.500	1	12/13/2019 14:55	WG1396153
1,1,2-Trichloroethane	ND		0.500	1	12/13/2019 14:55	WG1396153
Trichloroethene	ND		0.500	1	12/13/2019 14:55	WG1396153
Trichlorofluoromethane	ND		2.50	1	12/13/2019 14:55	WG1396153
1,2,3-Trichloropropane	ND		2.50	1	12/13/2019 14:55	WG1396153
1,2,4-Trimethylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,2,3-Trimethylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
1,3,5-Trimethylbenzene	ND		0.500	1	12/13/2019 14:55	WG1396153
Vinyl acetate	ND		5.00	1	12/13/2019 14:55	WG1396153
Vinyl chloride	ND		0.500	1	12/13/2019 14:55	WG1396153
Xylenes, Total	ND		1.50	1	12/13/2019 14:55	WG1396153
(S) Toluene-d8	*106*		*80.0-120*		*12/13/2019 14:55*	WG1396153
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*12/13/2019 14:55*	WG1396153
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*12/13/2019 14:55*	WG1396153

Method Blank (MB)

(MB) R3482440-2 12/13/19 11:14

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3482440-2 12/13/19 11:14

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*106*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3482440-1 12/13/19 10:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	27.1	108	19.0-160	
Acrylonitrile	25.0	25.4	102	55.0-149	
Benzene	5.00	4.83	96.6	70.0-123	
Bromobenzene	5.00	4.12	82.4	73.0-121	
Bromodichloromethane	5.00	4.78	95.6	75.0-120	
Bromochloromethane	5.00	5.16	103	76.0-122	
Bromoform	5.00	5.22	104	68.0-132	
Bromomethane	5.00	5.64	113	10.0-160	
n-Butylbenzene	5.00	5.17	103	73.0-125	
sec-Butylbenzene	5.00	4.59	91.8	75.0-125	
tert-Butylbenzene	5.00	4.18	83.6	76.0-124	
Carbon disulfide	5.00	4.67	93.4	61.0-128	
Carbon tetrachloride	5.00	4.94	98.8	68.0-126	
Chlorobenzene	5.00	4.98	99.6	80.0-121	
Chlorodibromomethane	5.00	4.92	98.4	77.0-125	
Chloroethane	5.00	4.49	89.8	47.0-150	
Chloroform	5.00	5.10	102	73.0-120	
Chloromethane	5.00	4.49	89.8	41.0-142	
2-Chlorotoluene	5.00	4.25	85.0	76.0-123	
4-Chlorotoluene	5.00	4.25	85.0	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.99	99.8	58.0-134	
1,2-Dibromoethane	5.00	4.97	99.4	80.0-122	
Dibromomethane	5.00	4.89	97.8	80.0-120	
1,2-Dichlorobenzene	5.00	5.11	102	79.0-121	
1,3-Dichlorobenzene	5.00	4.98	99.6	79.0-120	
1,4-Dichlorobenzene	5.00	5.11	102	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	3.84	76.8	33.0-144	
Dichlorodifluoromethane	5.00	5.11	102	51.0-149	
1,1-Dichloroethane	5.00	4.85	97.0	70.0-126	
1,2-Dichloroethane	5.00	4.94	98.8	70.0-128	
1,1-Dichloroethene	5.00	4.95	99.0	71.0-124	
cis-1,2-Dichloroethene	5.00	5.01	100	73.0-120	
trans-1,2-Dichloroethene	5.00	5.13	103	73.0-120	
1,2-Dichloropropane	5.00	4.84	96.8	77.0-125	
1,1-Dichloropropene	5.00	4.81	96.2	74.0-126	
1,3-Dichloropropane	5.00	4.84	96.8	80.0-120	
cis-1,3-Dichloropropene	5.00	4.71	94.2	80.0-123	
trans-1,3-Dichloropropene	5.00	4.84	96.8	78.0-124	
2,2-Dichloropropane	5.00	5.93	119	58.0-130	
Di-isopropyl ether	5.00	4.67	93.4	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3482440-1 12/13/19 10:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	5.00	4.94	98.8	79.0-123	
Hexachloro-1,3-butadiene	5.00	5.21	104	54.0-138	
2-Hexanone	25.0	26.1	104	67.0-149	
n-Hexane	5.00	5.58	112	57.0-133	
Iodomethane	25.0	25.2	101	33.0-147	
Isopropylbenzene	5.00	5.15	103	76.0-127	
p-Isopropyltoluene	5.00	4.68	93.6	76.0-125	
2-Butanone (MEK)	25.0	24.3	97.2	44.0-160	
Methylene Chloride	5.00	4.91	98.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	25.8	103	68.0-142	
Methyl tert-butyl ether	5.00	5.17	103	68.0-125	
Naphthalene	5.00	5.10	102	54.0-135	
n-Propylbenzene	5.00	4.21	84.2	77.0-124	
Styrene	5.00	4.91	98.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.02	100	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.49	89.8	65.0-130	
Tetrachloroethene	5.00	5.31	106	72.0-132	
Toluene	5.00	5.02	100	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	5.47	109	69.0-132	
1,2,3-Trichlorobenzene	5.00	5.27	105	50.0-138	
1,2,4-Trichlorobenzene	5.00	5.25	105	57.0-137	
1,1,1-Trichloroethane	5.00	5.14	103	73.0-124	
1,1,2-Trichloroethane	5.00	5.05	101	80.0-120	
Trichloroethene	5.00	4.65	93.0	78.0-124	
Trichlorofluoromethane	5.00	5.33	107	59.0-147	
1,2,3-Trichloropropane	5.00	4.47	89.4	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.87	97.4	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.28	85.6	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.24	84.8	76.0-122	
Vinyl acetate	25.0	28.0	112	11.0-160	
Vinyl chloride	5.00	4.39	87.8	67.0-131	
Xylenes, Total	15.0	14.9	99.3	79.0-123	
(S) Toluene-d8			*105*	*80.0-120*	
(S) 4-Bromofluorobenzene			*102*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

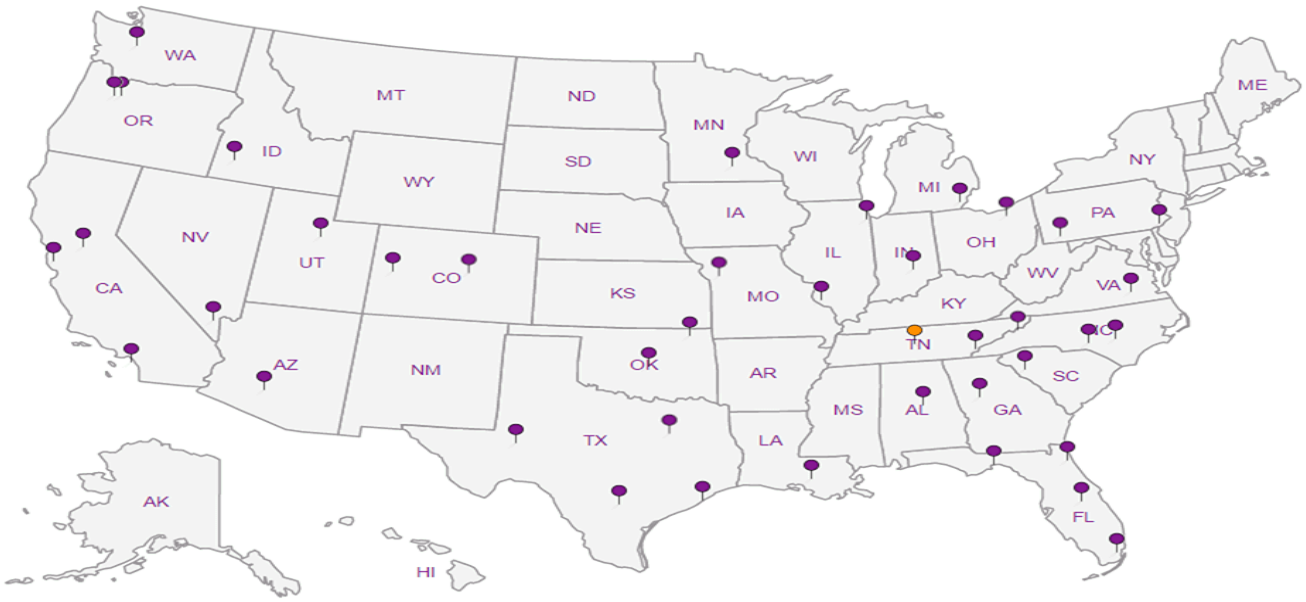
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Zipper Geo Associates - Lynnwood, WA

19019 36th Ave. W.

Billing Information:
Accounts Payable
19019 36th Ave. W.
Ste. E
Lynnwood, WA 98036

Report to: Jon Einarsen

Email To: jeinarsen@zippergeo.com

Project Description: Prime Cleaners

City/State Collected:

Phone: 425-582-9928
Fax:

Client Project # 1001.25

Lab Project # ZIPGEOLWA-100125

Collected by (print): K. Newman

Site/Facility ID #

P.O. # 1001.25

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

VOCs (V8260LLC) 40mlAmb-HCl

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1169666

D070

Acctnum: ZIPGEOLWA
Template: T144736
Prelogin: P716325
TSR: 110 - Brian Ford
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Remarks	Sample # (lab only)
MW-3		GW	N/A	12/9/19	1405	3		-01
MW-4		GW			1550			02
MW-8		GW			1500			03
Duplicate(MW-00)		GW			0000			04
Equipment Blank		GW			1510			05
		GW						
		GW						
		GW						
		GW						
		GW						

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: __Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	12/9/19	1500		2 0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.4 AS °C .7+0=.7 Bottles Received: 15	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 12/11/19 Time: 800	Hold: / Condition: NCF / OK

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 5, 2020

Jon Einarsen, Project Manager
Zipper Geo Associates, LLC
19019 36th Ave W, Suite E
Lynnwood, WA 98036

Dear Mr Einarsen:

Included are the results from the testing of material submitted on January 27, 2020 from the Prime Cleaners 1001.25, F&BI 001375 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ZGA0205R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 27, 2020 by Friedman & Bruya, Inc. from the Zipper Geo Associates, LLC Prime Cleaners 1001.25, F&BI 001375 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Zipper Geo Associates, LLC
001375 -01	Ambient
001375 -02	Money Tree
001375 -03	Osaka Grill
001375 -04	Prime Cleaners

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Ambient	Client:	Zipper Geo Associates, LLC
Date Received:	01/27/20	Project:	Prime Cleaners 1001.25, F&BI 001375
Date Collected:	01/24/20	Lab ID:	001375-01
Date Analyzed:	01/31/20	Data File:	013018.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	109	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	0.069	0.017
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.27	<0.05
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Money Tree	Client:	Zipper Geo Associates, LLC
Date Received:	01/27/20	Project:	Prime Cleaners 1001.25, F&BI 001375
Date Collected:	01/24/20	Lab ID:	001375-02
Date Analyzed:	01/31/20	Data File:	013019.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	109	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	0.073	0.018
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.27	<0.05
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Osaka Grill	Client:	Zipper Geo Associates, LLC
Date Received:	01/27/20	Project:	Prime Cleaners 1001.25, F&BI 001375
Date Collected:	01/24/20	Lab ID:	001375-03
Date Analyzed:	01/31/20	Data File:	013020.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	0.11	0.028
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.27	<0.05
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Prime Cleaners	Client:	Zipper Geo Associates, LLC
Date Received:	01/27/20	Project:	Prime Cleaners 1001.25, F&BI 001375
Date Collected:	01/24/20	Lab ID:	001375-04
Date Analyzed:	01/31/20	Data File:	013021.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	105	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	0.077	0.019
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.27	<0.05
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Zipper Geo Associates, LLC
Date Received:	Not Applicable	Project:	Prime Cleaners 1001.25, F&BI 001375
Date Collected:	Not Applicable	Lab ID:	00-0229 mb
Date Analyzed:	01/30/20	Data File:	013010.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.27	<0.05
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Date of Report: 02/05/20
Date Received: 01/27/20
Project: Prime Cleaners 1001.25, F&BI 001375

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 001354-01 1/3.0 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ppbv	<0.3	<0.3	nm
Chloroethane	ppbv	<3	<3	nm
1,1-Dichloroethene	ppbv	<0.3	<0.3	nm
trans-1,2-Dichloroethene	ppbv	<0.3	<0.3	nm
1,1-Dichloroethane	ppbv	<0.3	<0.3	nm
cis-1,2-Dichloroethene	ppbv	<0.3	<0.3	nm
1,2-Dichloroethane (EDC)	ppbv	<0.03	<0.03	nm
1,1,1-Trichloroethane	ppbv	<0.3	<0.3	nm
Trichloroethene	ppbv	<0.15	<0.15	nm
1,1,2-Trichloroethane	ppbv	<0.06	<0.06	nm
Tetrachloroethene	ppbv	<3	<3	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ppbv	5	88	70-130
Chloroethane	ppbv	5	91	70-130
1,1-Dichloroethene	ppbv	5	87	70-130
trans-1,2-Dichloroethene	ppbv	5	87	70-130
1,1-Dichloroethane	ppbv	5	84	70-130
cis-1,2-Dichloroethene	ppbv	5	86	70-130
1,2-Dichloroethane (EDC)	ppbv	5	87	70-130
1,1,1-Trichloroethane	ppbv	5	88	70-130
Trichloroethene	ppbv	5	81	70-130
1,1,2-Trichloroethane	ppbv	5	89	70-130
Tetrachloroethene	ppbv	5	84	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

001375

SAMPLE CHAIN OF CUSTODY

Report To Jon Einarsen
Company ZGA
Address jeinarsen@zippergeo.com
City, State, ZIP
425-582-9928
Phone Email

SAMPLERS (signature) ME 01-27-20
PROJECT NAME & ADDRESS: Prime Cleaners
PO # 1001.25
NOTES:
INVOICE TO: ZGA

Page # of

TURNAROUND TIME
X Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive Samples
☐ Other

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
Ambient	01	23234		IA / SG	1-24-20	29	0959	8	1830			X				
Money Tree	02	23235		IA / SG	↓	30	1004	6	1811			↓				
OSAKA Grill	03	20544		IA / SG	↓	29	1015	6	1815			↓				
Prime Cleaners	04	18570		IA / SG	↓	29	1027	6	1827			↓				
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Samples received at 19 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Jon Einarsen	ZGA	1-27-20	1206
Received by:	Morgan Schimelfenig	FBI	1/27/20	12:07
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044