REPORT OF GROUNDWATER MONITORING ACTIVITIES

Carriage Trade Cleaners
1703 10th Avenue South, Great Falls, Montana
DEQ Contract 414025 – Task Order #9

Prepared For:

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CTA Project No. GF13024.9

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1.0 EXECUTIVE SUMMARY

This report has been prepared to summarize groundwater monitoring activities at the Carriage Trade Cleaners property located at 1703 10th Avenue South, Great Falls, Montana (site), as shown in Figure 1 and Figure 2 in Appendix B. The scope of work for this project was defined by the Montana Department of Environmental Quality (DEQ) Groundwater Remediation Program in their *Task Order No. 9* (Task Order). Utilizing Senate Bill 96 (SB-96) funding approved by the 2015 Montana Legislature, DEQ retained CTA to conduct two rounds of groundwater sampling at the site to assess current groundwater quality. The scope of work was completed by CTA Environmental (CTA) in accordance with the terms of DEQ Contract No. 414025-TO9. In this investigation, existing nearby monitoring wells (from investigations of underground storage tank release sites) were sampled to evaluate current groundwater quality at the site.

The investigative activities reported herein were completed by CTA, during March and April 2017. The purpose of the work was to quantify current concentrations of tetrachloroethylene (PCE) in groundwater below and proximate to the site. CTA's scope of work included assessing the condition of existing monitoring wells and completing two (2) groundwater monitoring events. This report documents the methods and findings for each of these events.

The location of the site and pertinent site features, referred to throughout this report, are illustrated in Figures 1 through 4 provided in Appendix B. Copies of field forms and photographic documentation is provided in Appendix D. Data summary tables are presented in Appendix E, with copies of laboratory analytical reports provided in Appendix F. Data validation reports are provided in Appendix G.

Calculated groundwater flow direction for both sampling events was consistent with previous monitoring data from proximal underground storage tanks sites, regulated by DEQ's Petroleum Tank Cleanup (PTC) Section. Potentiometric data indicates a hydraulic gradient downward towards the north.

Groundwater data collected during the investigation indicates PCE subsurface impacts below the site at concentrations above DEQ's Circular DEQ-7 Montana Numeric Water Quality (DEQ-7) Standard of 5 micrograms per liter (µg/l). Trichloroethylene (TCE), a degradation product (i.e., daughter product) of PCE, was also detected in one well at a concentration greater than the DEQ-7 Standard of 5 µg/l. Concentrations of other daughter products, including cis-1,2-Dichloroethene and trans-1,2-Dichloroethene; were also detected in the samples but at concentrations below their respective DEQ-7 Standard.

The PCE plume extent is not clearly defined to the north and northeast of Carriage Trade Cleaners. However, additional plume definition would require the installation of additional monitoring wells. Additional recommendations are outside of the scope of Task Order 9, and DEQ will notify the responsible party of any additional remedial actions needed for the site and take any necessary actions to ensure the release is appropriately addressed.

2.0 BACKGROUND

The following summary represents CTA's understanding of the site's history as it pertains to the ongoing investigation required by DEQ. This summary is based on information provided to CTA by DEQ.

In 2004, DEQ's Petroleum Tank Cleanup (PTC) Section found PCE in monitoring wells associated with the Holiday Station Store #267 gasoline release. The PCE was attributed to Carriage Trade Cleaners, which is a dry-cleaning business located immediately upgradient of the wells with PCE. Carriage Trade Cleaners is located at 1703 10th Avenue South in Great Falls. No PCE was detected in wells up-gradient of Carriage Trade Cleaners. PTC reported the issue to DEQ's Enforcement Division.

In August 2005, DEQ's Enforcement Division referred the site to DEQ's Groundwater Remediation Program (DEQ-GRP). DEQ-GRP issued a Notice of Violation letter to the owner of Carriage Trade Cleaners, Mr. Robert Brohaugh, on September 19, 2005. Mr. Brohaugh has conducted three rounds of groundwater sampling since being noticed. Based on verbal communication with Mr. Brohaugh's consultant, Mr. Terry Webster, and DEQ; Mr. Brohaugh may not have the financial means to conduct the work at the site.

Mr. Terry Webster conducted sampling for PCE in 2008, 2010, and 2015 (see Table 1). These events coincided with groundwater purging and sampling work required by the PTC Section at the Holiday #276 gasoline release site. During each event, the consultant for Holiday #276 would purge and sample wells for petroleum hydrocarbons, and Mr. Webster would then collect an additional sample for the volatile analyses needed for the Carriage Trade Cleaners site. Over 2008, 2010, and 2015 monitoring events, PCE concentrations in individual wells either decreased, remained the same, or fluctuated, and PCE concentrations in the wells ranged from <1.0 µg/L to 52 µg/L (the DEQ-7 Standard is 5 µg/L).

The existing PCE concentrations at the site do not suggest the presence of free product, and the highest concentrations of PCE are located on the Carriage Trade Cleaners property near the building where active dry cleaning is ongoing. The highest measured PCE concentration at the site was 52 µg/l in well HGF-17s in 2010. Well HGF-17s is located immediately downgradient of the Carriage Trade Cleaners building.

3.0 PURPOSE

The purpose of the herein described work was to quantify the current concentrations of PCE in groundwater below and proximate to the site. This information will then be used by DEQ to determine if the site can be closed or if additional measures are needed to address the release.

4.0 METHODS

DEQ identified seven (7) specific tasks to be completed by CTA. The following sections detail the methods used by CTA to complete the required tasks.

4.1 Initial Coordination and Site Assessment

CTA attended an initial coordination teleconference with DEQ on March 20, 2017. Subsequently, CTA's environmental personnel completed an initial site assessment on March 22, 2017. CTA located and inspected the condition of the following eight (8) existing monitoring wells designated by DEQ: GHB-4s, HGF-17s, GHB-7s, GHB-54s, GHB-46s, WET-2, HGF-19s, and HGF-4s. These eight (8) monitoring locations are highlighted on the DEQ Reference Map provided in Appendix B See Section 5.1 for a discussion of the outcome of the well inspections.

4.2 Access Arrangements

The monitoring wells are located on properties owned by Carriage Trade Cleaners, Stephen and Marsha Martin (the Martins), and Taco Treat. DEQ sent correspondence to Carriage Trade Cleaners and the Martins on March 1, 2017, with subsequent correspondence to Taco Treat on March 20, 2017, and notified them of the intended sampling work. Additionally, DEQ sent a March 9, 2017 letter to Holiday Companies, who are responsible for the monitoring wells, to notify them of the planned work.

On March 20, 2017, CTA met with the owner of Carriage Trade Cleaners, Mr. Robert Brohaugh, and with Ms. Marsha Martin. For its own purposes, CTA obtained signed consent forms from each of these property owners and copies of the documentation are provided in Appendix C. Further, CTA communicated with Holiday Companies, via electronic mail, about its planned work and that correspondence is also provided in Appendix C.

4.3 Groundwater Monitoring

DEQ generally requires consecutive rounds of sampling during periods of high and low groundwater. However, based on several years of depth-to-water (DTW) monitoring at the adjacent Holiday Station Store #267, there is no apparent trend or seasonality with regard to DTW. In addition, given the time limitations of the SB96 funding, this work was performed under those constraints. Therefore, CTA completed groundwater monitoring activities, including measuring DTW, analyzing field water quality parameters, and collecting groundwater samples for laboratory analyses, during two (2) monitoring events, within a 2-week period, on March 28 and 29, 2017 and April 11 and 12, 2017.

CTA completed field logs documenting work activities. Field logs include work completed, personnel involved, key photographs depicting field conditions, and other pertinent information. Copies of the field logs and photographic documentation are provided in Appendix D.

The first groundwater monitoring event occurred during a relatively dry period of time, to attempt to capture relatively low groundwater. The second event was timed to take place after a precipitation event, in an attempt to capture higher groundwater levels. A comparison of DTW levels in the eight wells (Table 1) indicates that five of the wells had lower water levels in the

second event than the first, and three of the wells had higher levels in the second event compared to the first. The greatest overall difference in water depth was in well HGF-9s, which decreased by 0.76 feet in the second event compared to the first event. DTW difference in four of the wells differed by 0.08 feet or less between events. Between the two sampling events, there was no consistent trend in groundwater elevation change in the wells. The goal of sampling during high and low groundwater levels was not achieved in these sampling events.

Groundwater sampling, using low-flow methods, is the preferred protocol by DEQ. CTA followed its Standard Operating Procedure CTA46 (which includes low-flow groundwater sampling), a copy of which is attached in Appendix H DEQ's April 18, 2005 document, *SRS Low-Flow Purging and Sampling Guidelines* (2005 DEQ Guidance), states that a positive displacement pump, with adjustable flow rate, is the preferred mechanism for low-flow sampling. However, a suction pump, such as a peristaltic pump, is allowable under certain conditions (for example, when the size of the well casing does not allow the use of a larger pump, and/or when groundwater is very shallow).

CTA utilized an adjustable-flow, peristaltic pump to collect groundwater samples from all eight (8) monitoring wells. The choice to use this sampling technology is justified, as follows:

1. The depth to water in each monitoring well is less than 10 to 15 feet below ground surface (bgs), and as stated in the 2005 DEQ Guidance, there is less concern with degassing and associated potential of hydrogen (pH) changes in the sample at these shallow sampling depths;
2. Three (3) of the monitoring wells (i.e., GHB-46s, GHB-54s, and GHB-7s) have 1-inch diameter casing, and thus, preclude the use of most standard positive displacement sampling pumps, which typically are for 2-inch and larger diameter wells. To provide for comparable results, all the wells were sampled with the peristaltic pump; and
3. Upon initial inspection, several of the wells had only a few inches of water from which to purge and sample. The use of a bladder pump necessitates adequate water to submerge the pump inlet, which would not have been possible in several of the wells at this site. With a peristaltic pump, the tubing may be positioned at the bottom of the water column, to allow collection of water samples even when only a few inches of water are present in the well.

Other low-flow procedures stipulated in the 2005 DEQ Guidance were followed using the peristaltic pump sampling system. This included using new, Teflon, sample-collection tubing down-well and using new, pharmaceutical-grade, silicone tubing at the pump rotor head.

All reusable down-hole equipment was decontaminated using a Liquinox® detergent solution scrub, a 10 percent (%) methanol solution rinse, and a distilled water rinse. All electronic meters were calibrated on site in accordance with the recommendations of the respective manufacturers prior to monitoring. Evacuation water was surface-applied on paved surfaces at the site, in accordance with DEQ's purge water flow chart. Evacuation and monitoring data, including visual and olfactory observations, were recorded on field forms (Appendix D).

DTW measurements relative to the respective measuring points were taken for each well using an electronic probe. Field water quality parameters were monitored for each well using low-flow methods. This included using DEQ's closed, flow-through monitoring cell during the March sampling event, and, CTA's electronic meters and open, flow-through cell during the April sampling event. DEQ's flow-through monitoring cell was used during the March event because DEQ's meter has a turbidity sensor, while CTA's meter does not. Field water quality parameters measured included dissolved oxygen (DO), oxidation/reduction potential (ORP), pH, specific conductance (SC), temperature, and turbidity (turbidity only recorded during the March sampling event).

New, disposable Teflon tubing was submerged to the approximate upper ⅓ of the water column for each monitored well in order to minimize disturbance of sediment at the bottom of the well. The flow rate of the peristaltic pump was set at approximately 250 milliliters per min (ml/min), and the effluent was set to flow into the bottom of the monitoring cell and allowed to overflow out the top drain. Field water quality parameters were observed and recorded in approximate five-minute intervals, and low-flow evacuation continued until DO, pH, SC, temperature, and turbidity (March only) readings stabilized. Stabilized readings included changes of no more than 0.1 standard unit (su) for pH and no more than 10 percent (%) for DO, SC, temperature and turbidity (March only), as stipulated in the 2005 DEQ Guidance.

Purge water accumulated during sampling was disposed following DEQ's guidance *Disposal of Untreated Purge Water from Monitoring Wells, July 27, 2015 (http://deq.mt.gov/Land/StateSuperfund/FrequentlyAskedQuestions#water)*. Purge water was disposed of on the ground near the well that was being sampled where it would evaporate.

For those wells that did not purge to dryness, laboratory samples were collected after confirming field parameters had stabilized. Wells that purged to dryness were allowed to recover for approximately 24 hours, and then the recharged water was collected directly from the well. Laboratory samples were containerized and preserved using sample containers and preservatives provided by Energy Laboratories, Inc. (Energy). The samples were placed in a cooler with ice immediately following collection and were shipped to Energy using chain-of-custody protocol. In addition to the eight (8) natural samples, one (1) Quality Assurance/Quality Control (QA/QC) duplicate sample and one trip blank was collected during each monitoring event in accordance with the scope of work provided by DEQ. Field rinsate blanks were not collected because the sampling equipment was clean, single-use Teflon tubing, which did not require decontamination. The depth-to-water probe was decontaminated after each use by visual inspection and removal of any particles, spraying with a mild biodegradable detergent, then rinsing the probe with deionized water. Rinsate blanks were not collected from the depth-to-water probe. None of the organic compounds included in the required analyses are known to be naturally occurring; therefore, all analytes detected in the groundwater samples are assumed to be attributable to contamination in the groundwater.

CTA requested Energy analyze all natural and duplicate water samples from both events for EPA Method 8260B (long list), as requested by DEQ. Method 8260B (long list) requires the filling of 6, 40 ml VOA vials, whereas the Method 8260B (short list) method requires the filling of 3, 40 ml VOA vials. During the March sampling event, HGF-17s only had enough water to fill

sample containers for 8260B (short list) analysis DEQ contacted Energy Laboratory regarding the issue of limited sample volume, and confirmed that 3 40-ml VOA vials would be adequate for the Method 8260B (short list) analysis. DEQ also confirmed that the 8260B (short list) analysis includes PCE, TCE, and the other contaminants of concern at the site, and determined this method is acceptable for this project. During the April event, well HGF-17s did not have enough water to obtain a sample for either Method 8260B long or short list. CTA contacted DEQ regarding this issue, and DEQ concurred that a sample could not be collected from this well.

5.0 RESULTS

The following sections summarize the findings of CTA's investigation. Field Forms and Photo logs are included in Appendix D. Groundwater field and laboratory analytical data are summarized in tabular form in Appendix E. Select observations and data are illustrated on Figures 3 and 4 provided at the end of this report. Copies of laboratory analytical reports are presented in Appendix F, and data validation reports are found in Appendix G.

5.1 Initial Site Assessment

The initial site assessment, conducted on March 22, 2017, found that monitoring well WET-2 would not be suitable for sampling because the ½" well diameter was too small for the DTW probe. The initial site assessment also observed that multiple wells contained very little (only a few inches) water. DEQ was notified, and as a result, they selected monitoring wells HGF-6s and GHB-46s as alternative sampling locations. CTA then assessed the condition of these two (2) additional wells and found that they also were not adequate for sampling. The choice of monitoring well was then deferred until the first groundwater sampling event when DEQ personnel were present to make the final selection. Ultimately, GHB-46s was selected for sampling, and HGF-6s was not selected for sampling because the well monument was broken and was positioned in a depression filled with surface water.

5.2 Groundwater Monitoring

Calculated groundwater elevations ranged from 3,385.44 feet above mean sea level (amsl) to 3,391.1 feet amsl during the March monitoring event and between 3,385.56 to 3,390.56 feet amsl during the April monitoring event. The groundwater elevations were used to create the potentiometric surface maps depicted in Figure 3 and Figure 4 for the March and April events, respectively. DTW readings show that groundwater levels were similar in the two events.

As shown, average groundwater flow direction was generally toward the north for both monitoring events. This is consistent with previous groundwater flow determinations (for the Holiday #267 PTC site), as shown in Figure 2 of the October 30, 2015 *Groundwater Monitoring Report; AR01, Former Holiday Station Store #267*. The average groundwater gradient across the site for both events was inferred to be approximately 0.0235 feet (vertical) per feet (lateral).

Field water quality parameters were used as stabilization indicators for each well, prior to sampling, in accordance with the 2005 DEQ Guidance. During the March 2017 sampling event, DEQ's closed, flow-through monitoring cell, with attached multi-parameter water quality meter, was used to monitor the field indicator parameters DO, ORP, pH, SC, temperature, and

turbidity. Wells HGF-4s, HGF-19s, HGF-18s, and HGF-9s produced adequate low-flows and parameters stabilized before sampling. However, wells GHB-46s, GHB-54s, GHB-7s, and HGF-17s did not produce consistent flows and were pumped dry. These wells were left to recharge overnight and were sampled the following day.

The April 2017 sampling event produced similar results to the March event. CTA utilized its open, flow-through cell and meters to monitor the same field water quality parameters, with the exception of turbidity. Wells HGF-4s, GHB-54s, HGF-19s, HGF-18s, and HGF-9s produced adequate low-flows for sampling, whereas, wells GHB-46s, GHB-7s, and HGF-17s were pumped dry and sampled the following day. Field water quality parameters were generally similar for both the March 2017 and April 2017 events. However, DO concentrations recorded in the open, flow-through cell during April 2017 were much lower than those recorded in March 2017 in the closed, flow-through cell.

Oxygen solubility in water is dependent on the water temperature, specific conductance, and the elevation of the water above mean sea level. For the March and April 2017 sampling events, water temperatures ranged between 7.1 and 13.8 degrees Celsius. Likewise, SC values ranged between 1.129 and 3.96 millisiemens for the two events. Groundwater elevations for both events ranged between 3,385.44 feet and 3,391.1 feet amsl, which corresponds to a range of 671 and 672 millimeters mercury pressure. Using these values and the online software created by the United States Geological Survey (https://water.usgs.gov/software/DOTABLES/), CTA calculated that the maximum solubility of DO in groundwater below the site should range from 9.00 to 10.55 milligrams per liter (mg/l). The March 2017 DO measurements, using the closed flow-through cell, ranged between 4.7 and 26.94 mg/l, the upper end of which is significantly higher than the calculated maximum DO values for the site. It appears that the meter used in March may not have been functioning properly, although the calibration process that day did not report any problems. The April 2017 DO measurements, using the open flow-through cell, ranged between 0.2 and 8.65 mg/l, which is within the calculated maximum DO range for the site. Therefore, the March 2017 DO measurements do not accurately represent absolute values of DO in the groundwater. However, one purpose of the DO measurements was to establish stabilized groundwater flow conditions, and thus, their relative difference, and not their absolute values, are of interest during sampling. The relative changes between DO measurements when sampling each well were within acceptable sampling guidelines for both the March and April 2017 events. The DO absolute values from the March 2017 event should not be used for other purposes (for example, determining natural attenuation parameters).

As shown in Table 1 in Appendix E, PCE concentrations exceeded the DEQ-7 Standard of five (5) micrograms per liter (µg/l) in water samples from wells GHB-54s (6.9 µg/l), HGF-19s (13 µg/l), and HGF-17s (22 µg/l) during the March sampling event. During the April sampling event PCE was above the DEQ-7 Standard in wells GHB-54s (8.2 µg/l) and HGF-19s (13 µg/l). As previously described, monitoring well HGF-17s did not have enough water to sample during the April event, so there are no results for this well in April 2017.

Additionally, TCE was detected in well HGF-17s at a concentration of 5.4 µg/l, which is in exceedance of the DEQ-7 Standard of 5 µg/l, during the March sampling event. TCE is a daughter product of PCE and is formed as the contaminant degrades in the subsurface. TCE

can also be a co-contaminant with PCE. Other daughter products were also detected, including cis-1,2-dichloroethene and trans-1,2-dichloroethene. However, concentrations of these contaminants were less than their respective DEQ-7 Standards. Daughter products 1,1-dichloroethene; and, vinyl chloride were not detected in either of the sampling events.

Wells HGF-9 (upgradient of the site) and HGF-46s had concentrations of petroleum hydrocarbons above detection limits (see laboratory data sheets). These petroleum hydrocarbons are attributable to nearby underground storage tank petroleum release sites. DEQ's Petroleum Tank Cleanup (PTC) Section oversees the petroleum contamination from the tank release sites. DEQ's Groundwater Remediation Program has provided copies of these results to PTC.

5.3 Data Validation and Data Quality

Laboratory analytical data, for both sampling events, was validated by CTA in accordance with the document, Montana Department of Environmental Quality Data Validation Guidelines for Evaluating Analytical Data (November 4, 2016). The resulting data validation reports are provided in Appendix G.

CTA completed data validation of the analytical data for each sampling event. The March 2017 event had a calculated Relative Percent Difference (RPD) for the field duplicate ranging from 8-20%, which is within the generally accepted range of 0-30%. The April 2017 event displayed field duplicate sample results that were non-detect (ND), therefore the RPD could not be calculated. Both sampling events displayed trip-blank samples that were free of contamination.

As shown in the data validation reports (Appendix G), laboratory analytical results for PCE met the precision, accuracy, representativeness, and completeness requirements of the referenced guidance. The only laboratory qualifier noted was that some analytes were present, but at concentrations less than the reporting limit, and an estimated value was reported (i.e., qualifier J). During the March 2017 event, estimated values were given for cis-1,2-dichloroethene in well HGF-17s and TCE in wells GHB-7s and GHB-54s. Similarly, an estimated value for TCE was given for the sample from well GHB-54s as part of April 2017 laboratory data. No data were qualified as a result of the data validation process. Please see the attached data validation reports (Appendix G) for detailed information about sample data validation.

In the March 2017 event, the laboratory-measured temperature of the temperature blank was 7.3 degrees Celsius, which is slightly higher than the required temperature of 2-6 degrees Celsius. However, as noted on the laboratory sample check-in form, the samples were delivered on ice. Also, the samples were delivered to the laboratory the same day they were collected. It may be that some of the samples did not have time to chill before they arrived at the laboratory. The slightly higher temperature may cause the results to be biased low; however, the impact is expected to be minimal since the samples were properly cooled upon receipt at the lab and until sample extraction.

In the April 2017 event, the laboratory noted that one vial of the six total vials for sample GHB-54s contained an air bubble. The laboratory did not use the sample aliquot from this vial for

analysis, as adequate volume for analysis was present in the other five vials. Therefore, the quality of the data was not affected.

6.0 CONCLUSIONS

Groundwater laboratory analytical data indicate concentrations of PCE remain in the subsurface at the site at concentrations as high as 22 µg/l in well HGF-17s, which exceeds the DEQ-7 Standard of 5 µg/l. This well also had TCE at 5.3 µg/l, which exceeds the DEQ-7 Standard of 5 µg/l. Well HGF-17s is located approximately 15 feet downgradient of the Carriage Trade Cleaners building. Two additional wells, GHB-54s and HGF-19s, had PCE greater than the DEQ-7 Standard. GHB-54s is located cross gradient and downgradient of Carriage Trade Cleaners, and it's possible that the presence of PCE in this well is a result of PCE migration along utilities in the alley where the well is located. Information about utility locations may be found in PTC files for the Holiday #267 site. HGF-19s is located downgradient of Carriage Trade Cleaners. The PCE plume is not well-defined in the downgradient direction or northeasterly cross-gradient direction. Additional definition of the plume would necessitate the installation of new monitoring wells. Groundwater flow and gradient during the March and April 2017 monitoring events were generally consistent with previous monitoring data, with a north-trending downward gradient.

A comparison of older data (2008, 2010, and 2015) to current data (see Table 1) suggests that PCE levels are relatively stable. One well, GHB-7s, may have a decreasing PCE trend, but the two recent sampling results are below the DEQ-7 Standard.

The scope of this investigation did not include an evaluation of the vapor intrusion pathway. The buildings immediately downgradient of the Carriage Trade Cleaners site are former single-family homes that have been converted into office space. DEQ will evaluate the vapor intrusion pathway outside of the scope of this report.

In summary, concentrations of residual contamination appear to remain below the site, with the highest concentrations being found immediately north of Carriage Trade Cleaners in well HGF-17s. The dissolved-phase groundwater plume has not been completely defined to the north beyond HGF-19s or the northwest beyond HGF-54s.

7.0 RECOMMENDATIONS

Based on the data and conclusions presented in this report, CTA recommends continued groundwater monitoring. Groundwater monitoring should be conducted during the seasonal high groundwater period (i.e. June or July), in order to increase the likelihood of having adequate groundwater for sample collection. Groundwater monitoring should include DTW, field water quality parameters, and collection of samples for laboratory analysis of VOCs. In addition, a vapor intrusion evaluation is recommended for the buildings at and immediately downgradient of the site.

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ENVIRONMENTAL

APPENDIX A

DEQ Reference Documents

REFERENCE DOCUMENTS

DEQ Reference Map: *Groundwater Potentiometric Surface Map, September 2015, Former Holiday Station Store #267, Great Falls, Montana*

DEQ Data Validation Guidelines, Version 1.2, Revised 11/4/2016.
(http://deq.mt.gov/Portals/112/Land/StateSuperFund/Documents/DataValidationReport.pdf)

DEQ SRS Low-Flow Purging and Sampling Guidelines, 4/18/2005.
(http://deq.mt.gov/Portals/112/Land/StateSuperfund/Documents/srs_lowflow_memo.pdf)

DEQ Purge Water Disposal Flowchart, 7/27/2015.
(http://deq.mt.gov/Portals/112/Land/StateSuperfund/Documents/PurgeWater7_27_15.pdf)

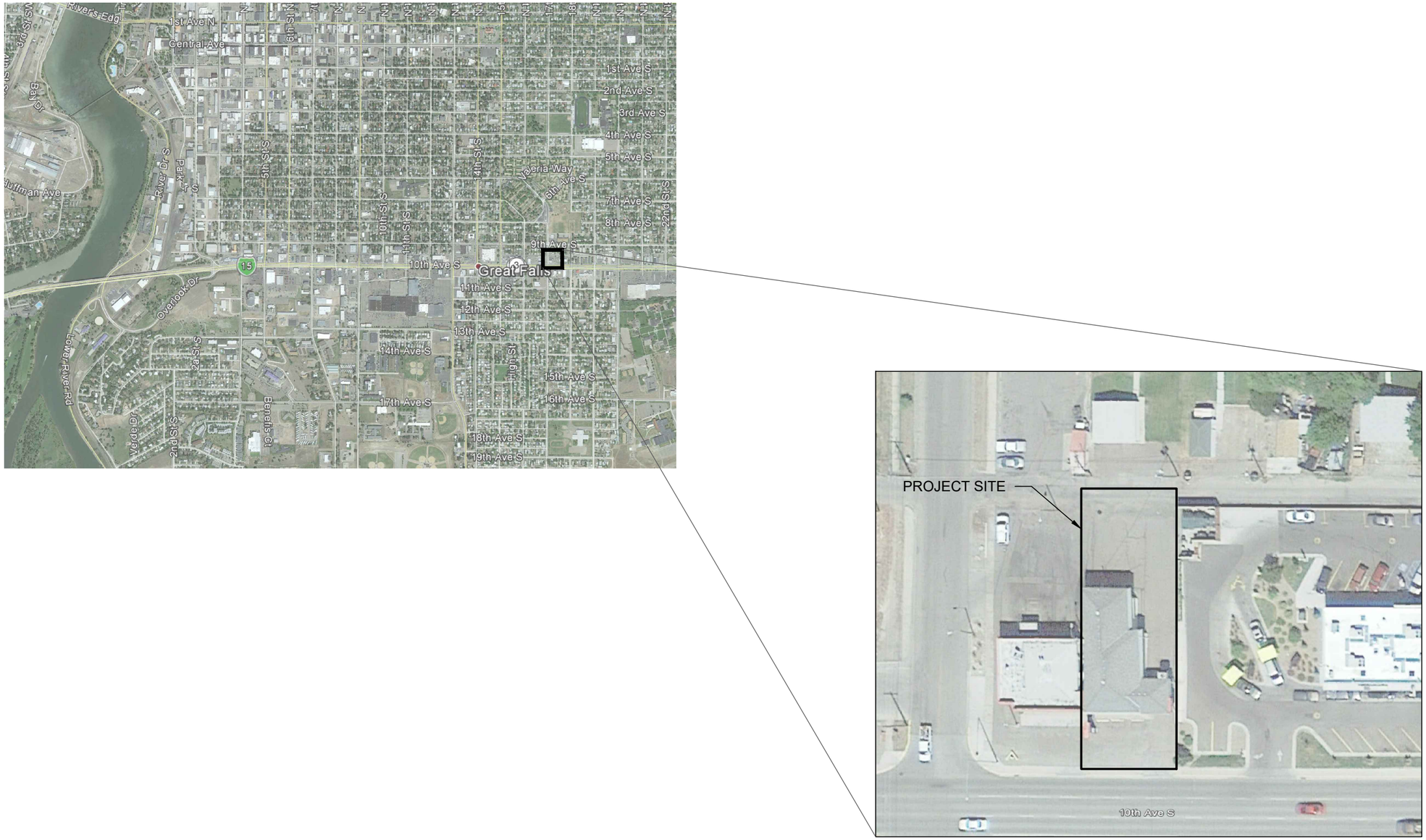
DEQ Circular DEQ-7, Montana Numeric Water Quality Standards, April 2017.
(http://deq.mt.gov/Portals/112/Water/WQPB/Standards/SB235Rulemaking/DEQ-7_Final_April2017.pdf)

ENVIRONMENTAL

APPENDIX B

Figures

CTA
ENVIRONMENTAL
GREAT FALLS, MT
p 406.452.3321
f 406.454.1873



NORTH

1 / FIG 1 SITE VICINITY MAP

1703 10TH AVE SOUTH, GREAT FALLS, MT
CARRIAGE TRADE CLEANERS
GROUND WATER SAMPLING
DEQ

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DRAWN BY
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CHECKED BY
REMSEN

SITE
VICINITY
MAP

FIGURE
1

NORTH

1 / FIG 2 SITE MAP

0 20' 40' 80'

LEGEND

XXX-XX MONITORING WELL

CTA ENVIRONMENTAL
GREAT FALLS, MT
p 406.452.3321
f 406.454.1873

1703 10TH AVE SOUTH, GREAT FALLS, MT
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GROUND WATER SAMPLING
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SITE MAP

FIGURE
2

CTA ENVIRONMENTAL
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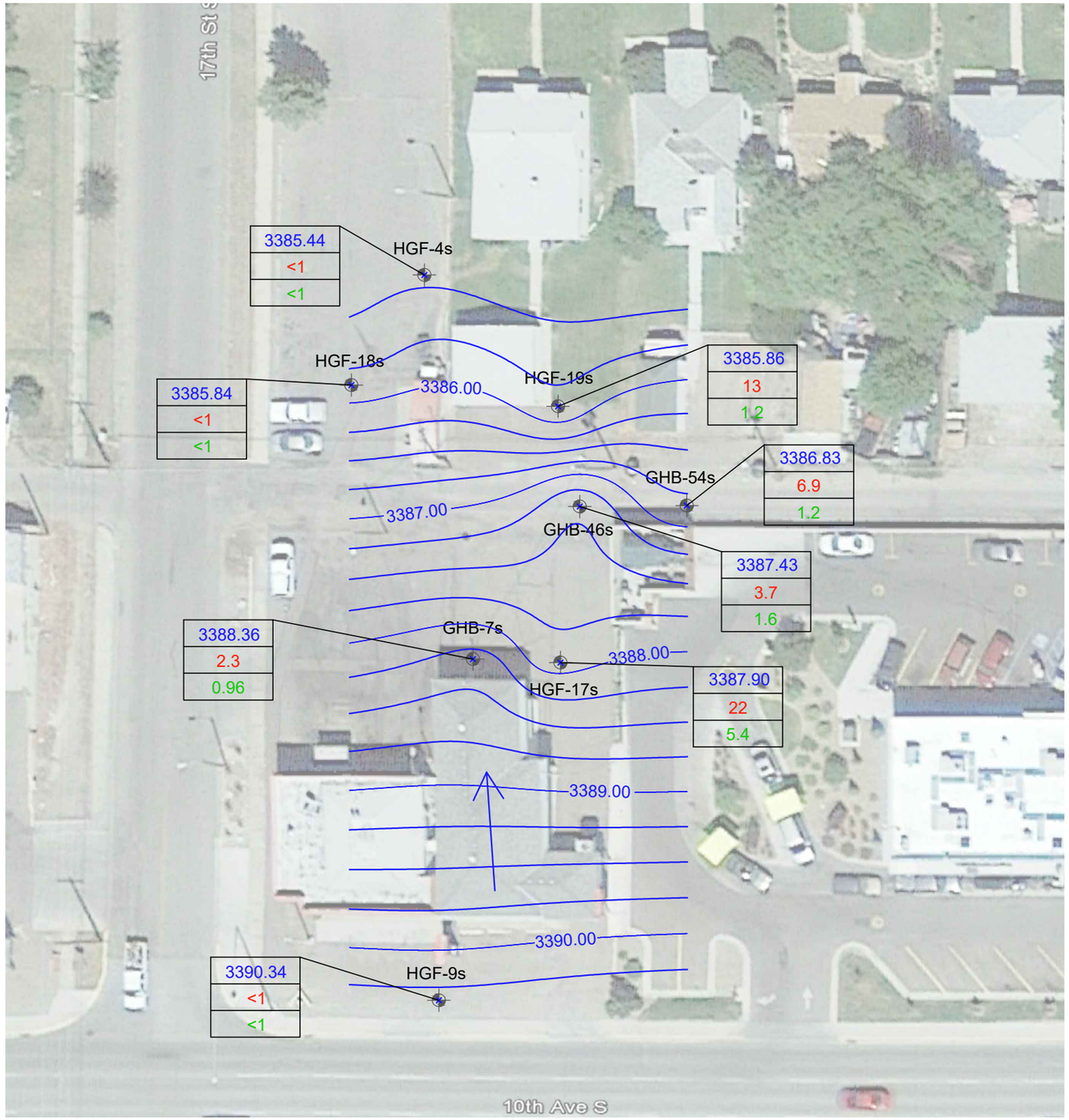

LEGEND

XXX-XX	MONITORING WELL AND GROUND WATER ELEVATION
XXXX.XX	GROUND WATER ELEVATION (amsl)
XXXX.XX	PCE CONCENTRATION (µg/l)
XXXX.XX	TCE CONCENTRATION (µg/l)
	GROUND WATER CONTOUR
	GROUND WATER FLOW DIRECTION
XXXX.XX	GROUND WATER CONTOUR ELEVATION

NORTH

1 / FIG 3

GROUND WATER CONTOURS

MARCH 28, 2017

0 20' 40' 80'

1703 10TH AVE SOUTH, GREAT FALLS, MT
CARRIAGE TRADE CLEANERS
GROUND WATER SAMPLING
DEQ

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04.19.2017
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GROUND WATER CONTOURS (3.28.2017)

FIGURE
3

CTA ENVIRONMENTAL
GREAT FALLS, MT
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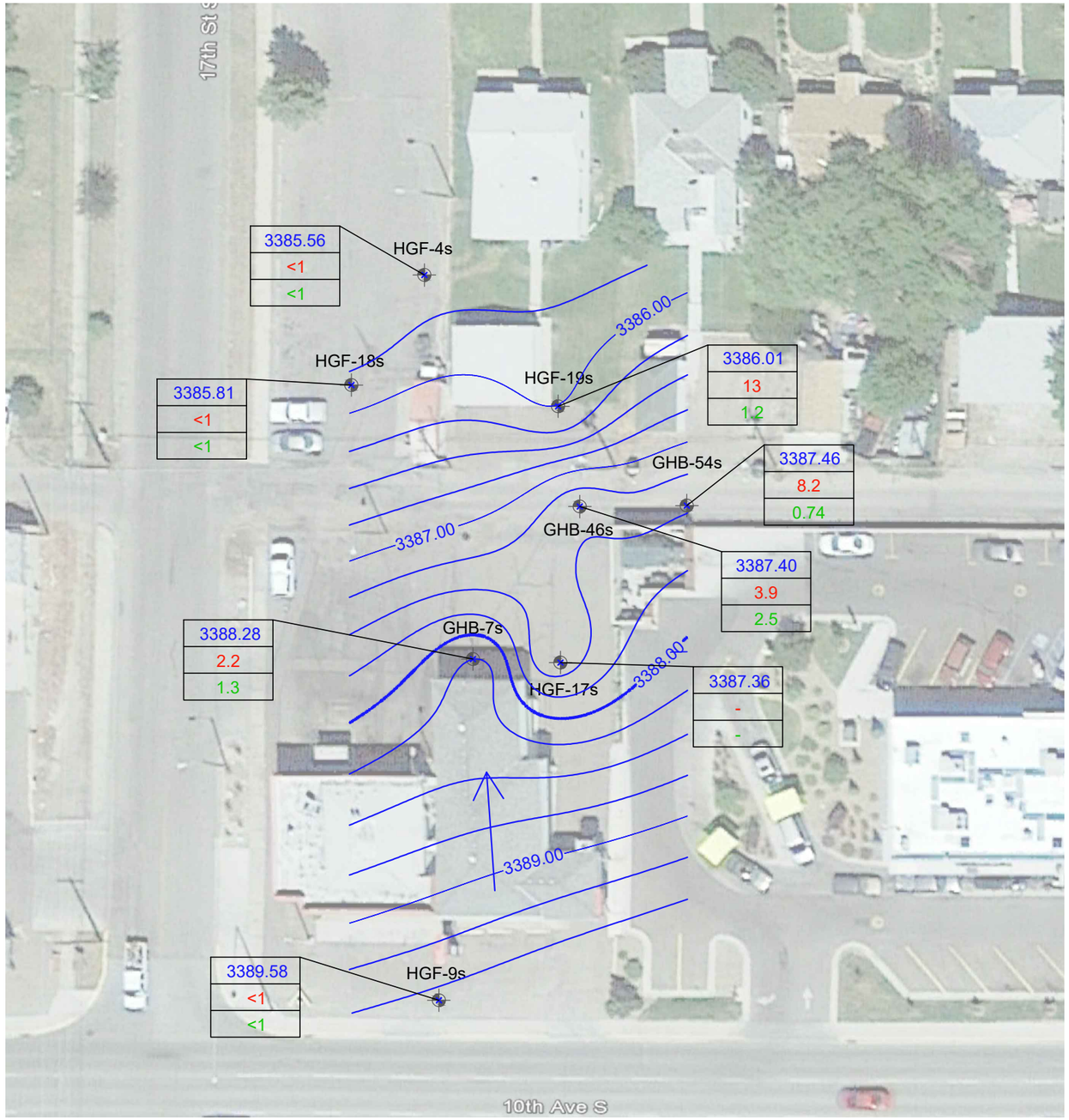
f 406.454.1873



LEGEND

XXX-XX	MONITORING WELL AND GROUND WATER ELEVATION
XXXX.XX	GROUND WATER ELEVATION (amsl)
XXXX.XX	PCE CONCENTRATION (µg/l)
XXXX.XX	TCE CONCENTRATION (µg/l)
	GROUND WATER CONTOUR
	GROUND WATER FLOW DIRECTION
XXXX.XX	GROUND WATER CONTOUR ELEVATION

NORTH

1 / FIG 4

GROUND WATER CONTOURS

APRIL 11, 2017

0 20' 40' 80'

1703 10TH AVE SOUTH, GREAT FALLS, MT
CARRIAGE TRADE CLEANERS
GROUND WATER SAMPLING
DEQ

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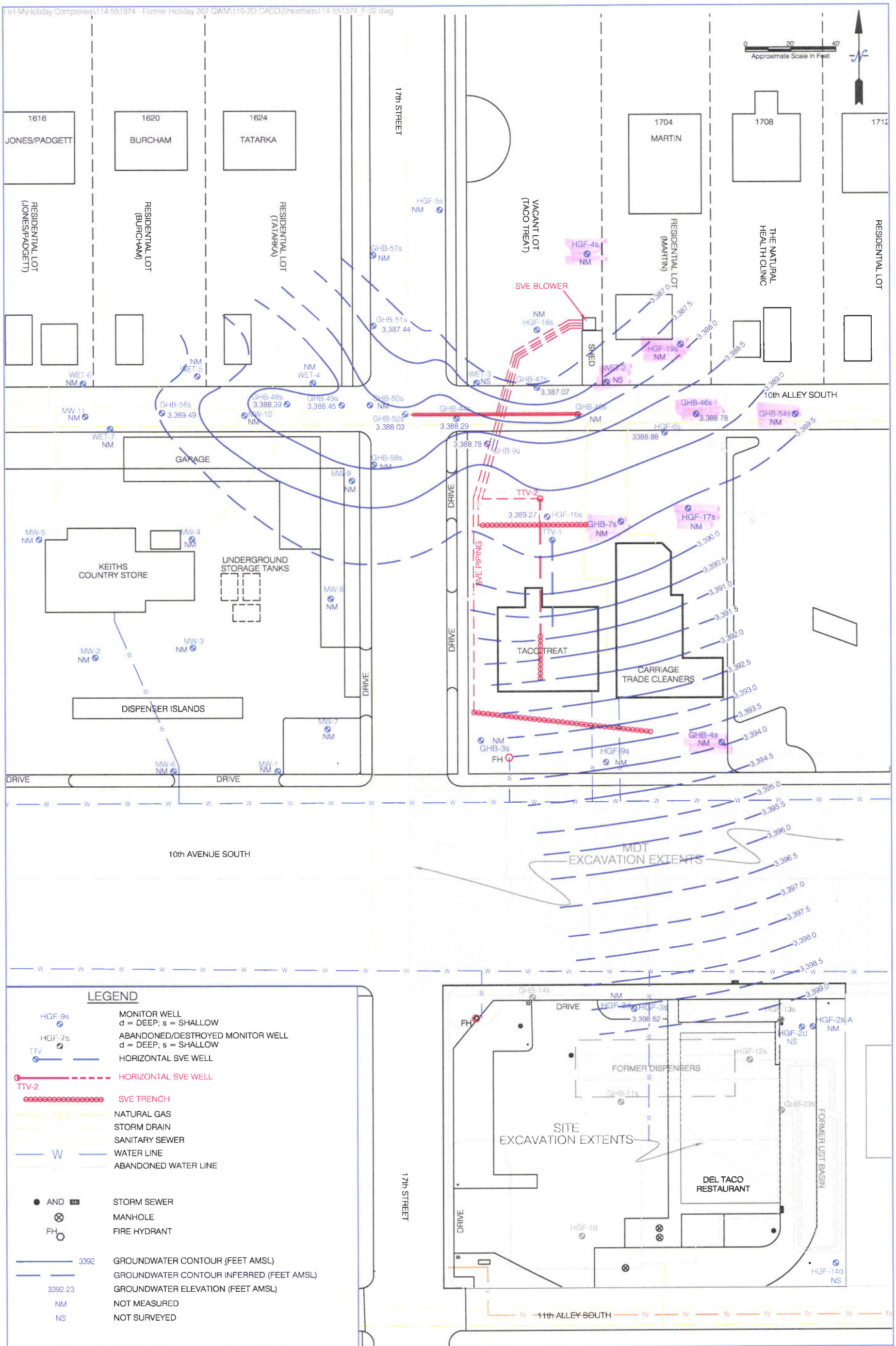
04.19.2017
GF13024.9

DRAWN BY
AXTMAN

CHECKED BY
REMSEN

GROUND WATER CONTOURS (4.11.2017)

FIGURE
4



GROUNDWATER POTENTIOMETRIC SURFACE MAP SEPTEMBER 2015 Former Holiday StationStore #267 Great Falls, Montana	DRAWN: DLL	APPROXIMATE SCALE: 1"=40'	FIGURE NO. 2
	REVIEWED: BM	DATE: 10/22/2015	PROJECT NO. 114-551374

ENVIRONMENTAL

APPENDIX C

Property Owner Correspondence

ENVIRONMENTAL

CONSENT FOR ACCESS TO PROPERTY

Name: CARRIAGE TRADE CLEANERS
Property Owner

Address: 1703 10TH AVE S, GREAT FALLS, MT

Property Address where Entry and Access is Sought *(if different than above):*
SAME

CTA Construction & Environmental, LLC (CTA) is working with the Montana Department of Environmental Quality (DEQ) to investigate tetrachloroethene (PCE) in groundwater caused by dry-cleaning operations at Carriage Trade Cleaners, 1703 10th Avenue South, Great Falls, Montana. As the owner of the above named property, I hereby acknowledge the following:

1. I understand that CTA personnel will be accessing my property to find, gain entry to, and sample groundwater monitoring wells that are located on my property;
2. I have given authorization to CTA to enter and have access to the above named property, at reasonable times and dates, upon verbal notification prior to accessing the property;
3. I have been assured by CTA that reasonable means will be taken to protect structures, vehicles, and other assets at my property during completion of the work;
4. I have been assured by CTA that refuse, garbage, and debris generated by CTA during completion of the work will be promptly removed from my property after completion of the work;
5. I understand that water purged from each monitoring well will be surface-applied on my property, in an environmentally-sound manner, as a result of the groundwater monitoring work; and,
6. I have been assured by CTA that site conditions will generally be maintained as is, and reasonably returned to pre-work condition, after completion of the work.

Additional Comments: PLEASE CONTACT ERIC WEBSTER 406-899.0156

3/22/2017
Date

Property Owner Signature

ROB BROHAUGH
Property Owner Print Name

CTA Environmental
219 2nd Avenue South, Great Falls, Montana 59405 406.452.3321 Fax: 406.454.1873
http://www.ctagroup.com E-mail: info@ctagroup.com

ENVIRONMENTAL

CONSENT FOR ACCESS TO PROPERTY

Name: STEPHEN AND MARSHA MARTIN
Property Owner

Address: 1704 9TH AVE S, GREAT FALLS, MT

Property Address where Entry and Access is Sought *(if different than above):*

SAME

CTA Construction & Environmental, LLC (CTA) is working with the Montana Department of Environmental Quality (DEQ) to investigate tetrachloroethene (PCE) in groundwater caused by dry-cleaning operations at Carriage Trade Cleaners, 1703 10th Avenue South, Great Falls, Montana. As the owner of the above named property, I hereby acknowledge the following:

1. I understand that CTA personnel will be accessing my property to find, gain entry to, and sample groundwater monitoring wells that are located on my property;
2. I have given authorization to CTA to enter and have access to the above named property, at reasonable times and dates, upon verbal notification prior to accessing the property;
3. I have been assured by CTA that reasonable means will be taken to protect structures, vehicles, and other assets at my property during completion of the work;
4. I have been assured by CTA that refuse, garbage, and debris generated by CTA during completion of the work will be promptly removed from my property after completion of the work;
5. I understand that water purged from each monitoring well will be surface-applied on my property, in an environmentally-sound manner, as a result of the groundwater monitoring work; and,
6. I have been assured by CTA that site conditions will generally be maintained as is, and reasonably returned to pre-work condition, after completion of the work.

Additional Comments:

3-22-17
Date

Marsha J Martin
Property Owner Signature

Marsha J Martin
Property Owner Print Name

CTA Environmental
219 2nd Avenue South, Great Falls, Montana 59405 406.452.3321 Fax: 406.454.1873
http://www.ctagroup.com E-mail: info@ctagroup.com

Alan Frohberg

From: Camie Pederson <camie.pederson@holidaycompanies.com>
Sent: Wednesday, March 22, 2017 8:02 AM
To: Alan Frohberg
Subject: RE: Accessing Groundwater Monitoring Wells, Carriage Trade Cleaners, Great Falls, MT

Hi Alan
Thanks for the information. I will pass this info on to the store.

Camie

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: Alan Frohberg <alanf@ctagroup.com>
Date: 3/22/17 8:55 AM (GMT-06:00)
To: Camie Pederson <camie.pederson@holidaycompanies.com>
Subject: Accessing Groundwater Monitoring Wells, Carriage Trade Cleaners, Great Falls, MT

Hello Camie,

As I stated in my voice mail, CTA is working with DEQ to investigate PCE contaminated groundwater found around the Carriage Trade Cleaners in Great Falls. CTA will be accessing monitoring wells belonging to Holiday Companies, and thus, I just wanted to let you know that we will doing that work today, Wednesday, March 22, and then again next Tuesday and Wednesday, March 28 and March 29. We will be also collecting additional groundwater samples from the monitoring wells in April, 2017. The work is explained in a March 9, 2017 letter from Laura Alvey at DEQ.

Please let me know if you have any questions or need any further information.

Respectfully,

- Alan

Alan T Frohberg, PE
Senior Environmental Project Manager
o 406.452.3321 x 1235 | c 406.564.0178

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ENVIRONMENTAL

APPENDIX D

Field Forms and Photo Logs

PHOTOGRAPHIC DOCUMENTATION

ENVIRONMENTAL

Client: DEQ | Project No.: GF13024.9

Project: Carriage Trade Cleaners | Personnel: Ross Remsen

Location: 1703 10th Ave S, Great Falls, MT | Date: March 22, 2017

Monitoring Well HGF-4s

Monitoring Well WET-2; well not used for sampling due to well only being ½" diameter.

Monitoring Well GHB-46s

Monitoring Well GHB-54s

Monitoring Well GHB-7s

Monitoring Well HGF-17s

Monitoring Well HGF-19s

Monitoring Well GHB-4s; well not used for sampling

HGF-4s, 2” diameter well, removed and disposed of tubing left in well.

WET-2, ½” diameter well, depth to water meter will not fit in well.

GHB-46s, 1” diameter well

GHB-54s, 1” diameter well

HGF-19s, 2” diameter well

GHB-7s, 1” diameter well, removed and disposed of tubing left in well.

HGF-17s, 2” diameter well, removed and disposed of tubing left in well.

GHB-4s, 1” diameter well, not used for sampling.

Monitoring Well HGF-6s, buried under gravel, lid was not attached to well protector.

HGF-6s, well protector full of gravel. Well not used for sampling.

CTA INDUSTRIAL HYGIENE & ENVIRONMENTAL

3/22/17

GROUND WATER SAMPLE LIST

Sheet ___ of ___

Project Name: Carriage Trade Cleaners

Project No.: GF13004.9

Completed By: Ross

Project Location: 1703 10th Ave S, Great Falls, MT

Approximate Elevation: ___

Well I.D.	Total Depth (ft.)	Casing Diam. (in.)	Prev. DTW (ft.)	DTW (ft.)	DTP (ft.)	Field Analyses: DO (pre-purge) mg/l	ORP (final) mV	pH (final) su	SC (final) mS	Temp (final) °C	Lab Analyses: VPH	EPH						Sample Date	Sample Time
HGF-4s	10.25	2	–	6.32	NA														
WET-2	?	~~3/4~~ ½	–	?	?														
GHB-46s	9.82	1	–	5.91	NA														
GHB-54s	9.64	1	–	7.06	NA														
HGF-19s	10.0	2	–	7.65	NA														
GHB-7s	8.69	1	–	6.75	NA														
HGF-17s	7.81	2	–	7.09	NA														
GHB-4s	11.6	1	–	9.56	NA														
HGF-6s	9.50	2	–	5.16	NA														
GHB-45s	?	1	–	–	–	SVE-WELL													

Notes: 3/22/17 Well Assessment

? - casing diameter to small for DTW Probe

→ *If submitting this form to the laboratory for a bottle order, request one (1) set of additional bottles and a temperature blank.*

Subject: Well Assessment Page: ____ of ____

Project No.: GF13034.9 By: Ross Date: 3/22/17

Project Name: Carriage Trade Cleaners

- Arrived on site at 0830. Alan on site coordinating work with property owners / managers.
- Weather: 43-59°F Sunny Wind 15 mph
- Locating Wells on site, had to use metal detector to locate:
  - GHB-4s - under 2-3 inches of dirt
  - HGF-19s - under 1 inch of grass + dirt
  - WET-2 - under 1 inch of dirt.
- 0850 all wells located, now assessing wells.
  - HGF-4s - 1 of bolt holes broke, sampling tubing left in well
  - WET-2 - missing 1 Bolt, sampling tubing left in well.
    - well grout to small for DTW probe
  - GHB-46s - sampling tubing left in well
  - GHB-54s - sampling tubing left in well
  - HGF-19s - Good
  - GHB-7s - Missing 2 bolts, sampling tubing left in well
  - HGF-17s - sampling tubing left in well, less than 1' of water
  - GHB-4s - Good
- Done Assessing wells, leaving site at 1030.
- Back at office done unloading truck 1050.
- On site again to assess additional wells 1335
  - HGF-6s - well protector destroyed under 2" of grout, sampling tubing left in well
  - GHB-45s - SVE well, only 2' deep

PIONEERING ENVIRONMENTS

PHOTOGRAPHIC DOCUMENTATION

ENVIRONMENTAL

Client: DEQ

Project No.: GF13024.9

Project: Carriage Trade Cleaners

Personnel: Ross Remsen

Location: 1703 10th Ave S, Great Falls, MT

Date: March 28, 2017

Sampling GHB-54s

Sampling GHB-54s

Sampling GHB-46s

Sampling HGF-17s

CTA Environmental
219 Second Avenue South, Great Falls, Montana 59405 406.452.3321 Fax: 406.454.1873
http://www.ctagroup.com/services/ihenv/ E-mail: info@ctagroup.com

CTA ENVIRONMENTAL

GROUND WATER SAMPLE LIST

Project Name: Carriage Trade Cleaners Project No.: GF13024.9 Completed By: Ross

Project Location: 1703 10th Ave S, Great Falls, MT Approximate Elevation: NA

Well I.D.	Total Depth (ft.)	Casing Diam. (in.)	Prev. DTW (ft.)	DTW (ft.)	DTP (ft.)	Field Analyses: DO (pre-purge) mg/l	ORP (final) mV	pH (final) su	SC (final) mS	Temp (final) °C	Lab Analyses: VPH	EPH	VOCs	Duplicate				Sample Date	Sample Time
HGF-4s	10.25	2	6.32	6.27	NA	12.53	231	6.52	2.02	7.54			x					3·28·17	1022
GHB-46s	9.82	1	5.91	5.95	NA	26.94	-156	6.71	2.4	9.16			x					3·29·17	1002
GHB-54s	9.64	1	7.06	6.98	NA	14.74	65	6.20	–	9.98			x					3·29·17	0946
HGF-19s	10	2	7.65	7.57	NA	14.43	200	6.84	2.11	8.38			x					3·28·17	1102
GHB-7s	8.69	1	6.75	6.74	NA	12.23	-115	6.40	–	13.8			x					3·29·17	0925
HGF-17s	7.81	2	7.09	7.10	NA	13.69	71	6.95	2.43	8.58			x					3·29·17	0858
HGF-18s	7.92	2	–	5.13	NA	13.24	94	6.91	2.14	9.52			x					3·28·17	1318
HGF-9s	15.07	2	–	10.92	NA	4.7	-70	6.79	3.96	8.04			x	x				3·29·17	0837

Notes: Accompanied by Laura Alvey with DEQ

→ *If submitting this form to the laboratory for a bottle order, request one (1) set of additional bottles and a temperature blank.*

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-4s

Project Number: GF13024.9 Sample Date / Time: 3-28-17 / 1022 Sequence: 1 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 10.25 DTW: 6.27 Sample Depth = DTW + [(TD-DTW)/3]: 7.60

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1001 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1006	.25	16.36	258	6.01	2.03	7.87	0
1011	.5	14.67	245	6.32	2.02	7.63	0
1016	.75	13.46	237	6.44	2.03	7.60	0
1021	1	12.53	231	6.52	2.02	7.54	0

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 13.5' of rigged tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-19s

Project Number: GF13024.9 Sample Date / Time: 3-28-17 / 1102 Sequence: 2 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 10 DTW: 7.57 Sample Depth = DTW + [(TD-DTW)/3]: 8.38

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1046 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1051	.25	17.45	203	6.78	2.10	8.56	0
1056	.5	14.78	201	6.83	2.11	8.42	0
1101	.75	14.43	200	6.84	2.11	8.38	0

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 14.5' of rigged tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: GHB-4les

Project Number: GP13024.9 Sample Date / Time: 3·29·17 / 1002 Sequence: 3 of 8

Casing Diameter / Type: 1" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 9.82 DTW: 5.95 Sample Depth = DTW + [(TD-DTW)/3]: 7.24

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH	↓	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	↓	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1124 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1129	.25	26.94	-156	6.71	2.40	9.16	82.7

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 16.5' of rigged tubing used. IBI's collected 3/28/17. Well went dry, sample collected 3/29/17.

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: GHB-54s

Project Number: GF13024.9 Sample Date / Time: 3-29-17 / 0946 Sequence: 4 of 8

Casing Diameter / Type: 1" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 9.64 DTW: 6.98 Sample Depth = DTW + [(TD-DTW)/3]: 7.87

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1150 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1155	.25	14.74	65	6.2	–	9.98	172

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 14' of rigged tubing used. IBI's collected 3/28/17. Well went dry, sample collected 3/29/17

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: GHB-7s

Project Number: GF13024.9 Sample Date / Time: 3-29-17 / 0925 Sequence: 5 of 8

Casing Diameter / Type: 1" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 8.69 DTW: 6.74 Sample Depth = DTW + [(TD-DTW)/3]: 7.39

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1210 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1215	.25	12.23	-115	6.40	–	13.80	130

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 13.5' of rigged tubing used. IBI's collected 3/28/17
Well went dry, sample collected 3/29/17

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carrige Trade Cleaners Well Number: HGF-17s

Project Number: GF13024.9 Sample Date / Time: 3.29.17 / 0858 Sequence: 6 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☒ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 7.81 DTW: 7.10 Sample Depth = DTW + [(TD-DTW)/3]: 7.34

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1228 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1233	.25	13.69	71	6.95	2.43	8.58	23.2

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 13.5' of rigged tubing used. IBI's collected 3/28/17 Well went dry, Sample collected 3/29/17

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-18s

Project Number: GP13024.9 Sample Date / Time: 3-28-17 / 1318 Sequence: 7 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 7.92 DTW: 5.73 Sample Depth = DTW + [(TD-DTW)/3]: 6.46

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1302 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
1307	.25	14.67	81	6.97	2.1	11.01	0
1312	.5	13.67	90	6.92	2.11	10.97	0
1317	.75	13.24	94	6.91	2.14	9.52	0

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 12.5' of rigged tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-9s

Project Number: GH 13024.9 Sample Date / Time: 3-29-17 / 0837 Sequence: 8 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 15.07 DTW: 10.92 Sample Depth = DTW + [(TD-DTW)/3]: 12.3

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	Horiba	today	Cal. Method: Instrument Provided by DEQ
ORP	↓	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.		"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 0821 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)	Turb. (NTU)
Pre-Evac.	0						
0826	.25	6.04	-54	6.82	3.86	7.91	7.3
0831	.5	4.83	-70	6.80	3.95	8.16	0
0836	.75	4.70	-70	6.79	3.96	8.04	0

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 18.5' of rigid tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☒ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6-40 ml VOAs	HCl	Zero headspace

Subject: Carriage Trade Cleaners - GW Sampling Page: 1 of 2

Project No.: GF43024.9 By: Ross Date: 3/28/17

Project Name: Carriage Trade Cleaners

Arrived on site at 0845.

- Talked w/ Laura Alvey on which replacement well to use.
  - HGF-6s was under a puddle, decided to use HGF-16s instead of WET-2

- Laura is calibrating Horiba meter

- 0945 setting up for sampling
  - GHB-4Gs, ~~well~~ started ~~went~~ dewatering 2 min into evac., added additional tubing and completely dewatered well (5 min)
  - GHB-5Gs, well started to dewater at 3 min, added 3' of tubing. Laura decided not to evac water because water appeared dirty and she did not want it to go through closed cell.
  - GHB-7s, well went dry after 2 min
  - HGF-17s, well went dry after 4 min

- Checking HGF-9s, DTW - 10.92, TD = 15.07
  - will sample instead of HGF-9s

- Stopping for the day 1330. Back at office 1340

PIONEERING ENVIRONMENTS

Subject: GW Sampling Page: 2 of 2

Project No.: GF13024.9 By: Ross Date: 3/29/17

Project Name: Carriage Trade Cleaners

- Arrived on site at 0735, set up to sample HGF-9s
- Laura arrived on site at 0755
- Battery was dead, Alan delivered a new one
- * HGF-9s Duplicate Sample
- HGF-17s - filled 1 vial and well went dry
  - Laura talked to Energy lab + said to focus on short list if we can't fill all vials
  - Finished sampling HGF-17s at 1025 filled 4 of 6 vials
- Finished sampling leaving site at 1033
- Back at office unloaded truck packaged samples for Laura to take to lab 1130

PIONEERING ENVIRONMENTS

PHOTOGRAPHIC DOCUMENTATION

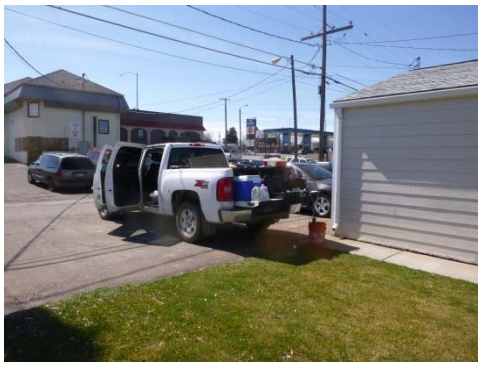
ENVIRONMENTAL

Client: DEQ | Project No.: GF13024.9

Project: Carriage Trade Cleaners | Personnel: Ross Remsen

Location: 1703 10th Ave S, Great Falls, MT | Date: April 11, 2017

Sampling GHB-54s



Sampling HGF-19s

Trying to sample HGF-17s

Sampling HGF-18s

Sampling GHB-46s

Sampling GHB-7s

CTA Environmental
219 Second Avenue South, Great Falls, Montana 59405 406.452.3321 Fax: 406.454.1873
http://www.ctagroup.com/services/ihenv/ E-mail: info@ctagroup.com

CTA ENVIRONMENTAL

Sheet 1 of 1

GROUND WATER SAMPLE LIST

Project Name: Carriage Trade Cleaners Project No.: GF13024.9 Completed By:

Project Location: 1703 10th Ave S., Great Falls, MT Approximate Elevation: NA

Well I.D.	Total Depth (ft.)	Casing Diam. (in.)	Prev. DTW (ft.)	DTW (ft.)	DTP (ft.)	Field Analyses: DO (pre-purge) mg/l	ORP (final) mV	pH (final) su	SC (final) mS	Temp (final) °C	Lab Analyses: VPH	EPH	VOCs	Duplicate				Sample Date	Sample Time
HGF-4s	10.25	2	6.27	6.15	NA	2.47	92	7.05	1.230	8.2			x	x				4-11-17	1026
GHB-46s	9.82	1	5.95	5.98	NA	0.72	-135	6.92	1.235	8.5			x					4-12-17	1325
GHB-54s	9.64	1	6.98	6.35	NA	6.21	32	7.01	1.194	7.1			x					4-11-17	1130
HGF-19s	10	2	7.57	7.42	NA	3.71	57	7.16	1.173	8.9			x					4-11-17	1316
GHB-7s	8.69	1	6.74	6.82	NA	3.72	97	7.18	1.243	9.0			x					4-12-17	1343
HGF-17s	7.81	2	7.10	7.64	NA	8.65	97	6.75	1.211	8.8			x					–	–
HGF-18s	7.92	2	5.73	5.76	NA	7.21	121	7.13	1.129	8.8			x					4-11-17	1434
HGF-9s	15.07	2	10.92	11.68	NA	0.20	-67	6.89	1.671	9.7			x					4-11-17	1503

Notes:

➔ *If submitting this form to the laboratory for a bottle order, request one (1) set of additional bottles and a temperature blank.*

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-4s

Project Number: GF13024.9 Sample Date / Time: 4.11.17 / 1026 Sequence: 1 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 10.25 DTW: 6.15 Sample Depth = DTW + [(TD-DTW)/3]: 7.52

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS (No Temp Cal.)

Evacuation Start Time: 1010 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1015	.25	1.03	100	7.00	1.296	8.3
1020	.5	2.18	96	7.04	1.244	8.2
1025	.75	2.47	92	7.05	1.230	8.2

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 15' of teflon tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☒ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: GHB-46s

Project Number: GF 13024.9 Sample Date / Time: 4.12.17 / 1325 Sequence: 2 of 8

Casing Diameter / Type: 1" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 9.82 DTW: 5.98 Sample Depth = DTW + [(TD-DTW)/3]: 7.26

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1053 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1058	.25	0.72	-135	6.92	1.235	8.5

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 15' of teflon tubing used. IBIs collected 4.11.17 well went dry, sample collected 4.12.17

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: GHB-54s

Project Number: GF13024.9 Sample Date / Time: 4-11-17 / 1130 Sequence: 3 of 8

Casing Diameter / Type: 1" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 9.64 DTW: 6.35 Sample Depth = DTW + [(TD-DTW)/3]: 7.45

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1119 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1124	.25	6.44	24	7.02	1.184	7.3
1129	.5	6.21	32	7.01	1.194	7.1

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 15' of teflon tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-19s

Project Number: GF13024.9 Sample Date / Time: 4.11.17 / 1316 Sequence: 4 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 10 DTW: 7.42 Sample Depth = DTW + [(TD-DTW)/3]: _____

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1300 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1305	.25	3.72	57	7.15	1.182	9.2
1310	.5	3.71	57	7.16	1.173	8.9
1315	.75					

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 16' of teflon tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: GHB-7s

Project Number: GF18024.9 Sample Date / Time: 4.12.17 / 1343 Sequence: 5 of 8

Casing Diameter / Type: 1" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 8.69 DTW: 6.82 Sample Depth = DTW + [(TD-DTW)/3]: 7.44

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1332 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1337	.25	3.72	97	7.18	1.243	9.0

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 15' of teflon tubing used. IBI's recorded 4.11.17
Well pumped dry, sample collected 4.12.17

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-17s

Project Number: GF13024.9 Sample Date / Time: 4-12-17 / — Sequence: 6 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 7.81 DTW: 7.64 Sample Depth = DTW + [(TD-DTW)/3]: 7.70

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS (No Temp Cal.)

Evacuation Start Time: 1355 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1356		8.65	97	6.75	1.211	8.8

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 14' of teflon tubing used. IBIs collected 4-11-17 Well pumped dry. Tried sampling 4-12-17, well still dry. NO SAMPLE

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☐ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-18s

Project Number: GF13024.9 Sample Date / Time: 4.11.17 / 1434 Sequence: 7 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 7.92 DTW: 5.76 Sample Depth = DTW + [(TD-DTW)/3]: 6.48

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1418 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1423	.25	5.24	131	7.12	1.131	8.8
1428	.5	7.26	123	7.13	1.129	8.7
1433	.75	7.21	121	7.13	1.129	8.8

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 14' of teflon tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Carriage Trade Cleaners Well Number: HGF-9s

Project Number: GF13024.9 Sample Date / Time: 4.11.17 / 1503 Sequence: 8 of 8

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☒ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☒ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☒ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☒ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 15.07 DTW: 11.68 Sample Depth = DTW + [(TD-DTW)/3]: 12.81

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Oakton	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC / Temp.	Oakton	"	Cal standard: 1413 µS / (No Temp Cal.)

Evacuation Start Time: 1447 Flow Rate: ~250 (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Temp. (°C)
Pre-Evac.	0					
1452	.25	0.62	-59	6.84	1.690	10.1
1457	.5	0.36	-62	6.88	1.655	9.8
1502	.75	0.20	-67	6.89	1.671	9.7

Note: Evacuate and monitor until pH, SC, and Temp. stabilize (Δ pH < 0.1 su; Δ SC < 10%; Δ Temp < 10%).

Observations & Comments: 1' flex + 20' of teflon tubing used

Decontamination Fluids Used: ☒ Potable Water/Liquinox ☒ Methanol ☒ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☒ Same as Evacuation Method ☐ Other: _____

Sample Type: ☒ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☒ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☒ VOCs-Extended List	SW8260	6 – 40 ml VOAs	HCl	Zero headspace

Subject: GW Sampling Page: ____ of ____

Project No.: GF13024.9 By: Ross Date: 4/11/17

Project Name: Carnaya Trade Cleaners

- Arrived on site at 0900 Weather: 35-53°F Sunny
- Starting with recording DTW in all wells. finished at 0940
- Calibrating meters before sampling.
- *HGF-4s duplicate sample
- GHB-46s well pumped dry, will sample tomorrow.
- HGF-19s - car parked in the way, had to get car moved to sample
- GHB-7s - well pumped dry, will sample tomorrow
- HGF-17s - well pumped dry within 1 min, will sample tomorrow
- Finished sampling for the day. Deconed equipment + leaving site 1520
- Back at office 1530.

4/12/17

- Arrived on site at 1315 Weather: 52-56°F Cloudy
- Sampled GHB-46s + GHB-7s
- HGF-17s - well was dry, unable to sample.
- Leaving site at 1410
- Back at office done unloading 1435.

PIONEERING ENVIRONMENTS

ENVIRONMENTAL

APPENDIX E

Data Summary Tables

CTA ENVIRONMENTAL

Table 1
GROUND WATER DATA SUMMARY TABLE
Carriage Trade Cleaners - 1703 10th Avenue South, Great Falls, Montana
DEQ Contract 414025 - Task Order No. 9

Well Info[3]	Sample Date	Sample Type[4]	DTW[5]	GWE[5]	Field WQP Data[1] DO	ORP	pH	SC	Temp	Turb	Lab Data[2] VOCs PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl chloride
HGF-4s	9/14/2015	-	-	-	-	-	-	-	-	-	<1.0	<0.40	<0.50	<0.50	NA	<0.40
TD: 10.25	3/28/17	Nat	6.27	3,385.44	12.53	231	6.52	2.02	7.54	0.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Screen: 5-10.25	4/11/17	Nat	6.15	3,385.56	2.47	92	7.05	1.230	8.2	–	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MPE: 3391.71		Dup									< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GHB-46s	4/3/08	-	-	-	-	-	-	-	-	-	3.9 J	5.3	9.8	<5.0	<5.0	<5.0
TD: 9.82	3/28/17	Nat	5.95	3,387.43	26.94	-156	6.71	2.40	9.16	82.7	3.7	1.6	7.4	1.1	< 1.0	< 1.0
Screen: 5-9.82	4/11/17	Nat	5.98	3,387.40	0.72	-135	6.92	1.235	8.5	–	3.9	2.5	6.6	1.1	< 1.0	< 1.0
MPE: 3393.38																
GHB-54s	4/3/2008	-	-	-	-	-	-	-	-	-	15	1.1	<1.0	<1.0	<1.0	<1.0
TD: 9.64	8/11/2010	-	-	-	-	-	-	-	-	-	4.6	<0.50	<0.50	<0.50	NA	<0.50
Screen: 5-9.64	9/14/2015	-	-	-	-	-	-	-	-	-	5.6	<0.40	<0.50	<0.50	NA	<0.20
MPE: 3393.81	3/28/17	Nat	6.98	3,386.83	14.74	65	6.2	–	9.98	172	6.9	0.59 J	< 1.0	< 1.0	< 1.0	< 1.0
	4/11/17	Nat	6.35	3,387.46	6.21	32	7.01	1.194	7.1	–	8.2	0.74 J	< 1.0	< 1.0	< 1.0	< 1.0
HGF-19s	4/14/08	-	-	-	-	-	-	-	-	-	13	0.86 J	<1.0	<1.0	<1.0	<1.0
TD: 10	3/28/17	Nat	7.57	3,385.86	14.43	200	6.84	2.11	8.38	0.0	13	1.2	< 1.0	< 1.0	< 1.0	< 1.0
Screen: 5-10	4/11/17	Nat	7.42	3,386.01	3.71	57	7.16	1.173	8.9	–	13	1.2	< 1.0	< 1.0	< 1.0	< 1.0
MPE: 3393.43																
GHB-7s	8/10/2010	-	-	-	-	-	-	-	-	-	11.5	2.5	2.5	1.2	NR	<0.50
TD: 8.69	9/14/2015	-	-	-	-	-	-	-	-	-	3.5	2.9	7.1	4.2	NR	<0.40
Screen: 4-8.69	3/28/17	Nat	6.74	3,388.36	12.23	-115	6.40	–	13.8	130	2.3	0.96 J	2.3	1.4	< 1.0	< 1.0
MPE: 3395.10	4/11/17	Nat	6.82	3,388.28	3.72	97	7.18	1.243	9.0	–	2.2	1.3	4.2	2.1	< 1.0	< 1.0
HGF-17s	4/3/08	-	-	-	-	-	-	-	-	-	25	0.91 J	<1.0	<1.0	<1.0	<1.0
TD: 7.81	8/10/10	-	-	-	-	-	-	-	-	-	52	7.9	<0.50	<0.50	<0.50	<0.50
Screen: 4-7.81	9/14/15	-	-	-	-	-	-	-	-	-	34.70	21.90	<0.50	<0.50	<0.50	<0.40
MPE: 3395.00	3/28/17	Nat	7.10	3,387.90	13.69	71	6.95	2.43	8.58	23.2	22	5.4	0.26 J	< 1.0	< 1.0	< 1.0
	4/11/17	Nat	7.64	3,387.36	8.65	97	6.75	1.211	8.8	–	Not enough water in well to sample					
HGF-18s	3/28/17	Nat	5.73	3,385.84	13.24	94	6.91	2.14	9.52	0.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TD: 7.92	4/11/17	Nat	5.76	3,385.81	7.21	121	7.13	1.129	8.8	–	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Screen: 4-7.92																
MPE: 3391.57																
HGF-9s	8/10/2010	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.50	<0.50	NA	<0.50
TD: 15.07	9/15/2015	-	-	-	-	-	-	-	-	-	<1.0	<0.40	<0.50	<0.50	NA	<0.40
Screen: 5-15.07	3/28/17	Nat	10.92	3,390.34	4.7	-70	6.79	3.96	8.04	0.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MPE: 3401.26		Dup									< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	4/11/17	Nat	11.68	3,389.58	0.2	-67	6.89	1.671	9.7	–	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Regulatory Criterion[7]:					**NR**	**NR**	**NR**	**NR**	**NR**	**NR**	**5**	**5**	**70**	**100**	**7**	**0.2**

Notes:

1 - Water Quality Parameters (WQP) include dissolved oxygen (DO), oxidation/reduction potential (ORP), pH, specific conductance (SC), temperature (temp), and turbidity (turb). IBIs were measured using electronic meters and are reported in the following units: DO - milligrams per liter (mg/l); ORP - millivolts (mV); pH - standard units (su); SC - milliseimens (mS); and temp - degrees Celsius (°C). All measurements were stabilized readings taken immediately prior to collection of laboratory samples.

2 - Laboratory analytical data include 8260-Volatile Organic Compounds-Extended List. Well HGF-17s is 8260-Volatile Organic Compounds-Short List. PCE and it's daughter products are recorded on the table.

3 - Well information includes well identification (e.g. HGF-4s); total depth (TD) of the well reported in feet below ground surface (bgs); the well screen interval reported in feet bgs; and the measuring point elevation (MPE) reported in feet above mean sea level, relative to the North American Vertical Datum of 1988 (NAVD88).

4 - Sample Type indicates whether the sample is a Natural (Nat) or Duplicate (Dup) sample.

5 - Depth to Water (DTW) is reported in feet below the MP.

6 - Ground Water Elevation (GWE) is reported in feet above mean sea level, relative to the NAVD88, as determined by subtracting the DTW from the MPE.

7 - Regulatory criteria are the Circular DEQ-7 Montana Numeric Water Quality Standards, updated May 2017. NR delineates that no regulatory criterion apply for that parameter.

– - Indicates the field analysis was not performed, or the data were not available from the previous consultant.

NA - Indicates that the laboratory analysis was not performed, or the data were not available from the previous consultant.

- Pink shading indicates an exceedance of the regulatory criterion or screening level for the analyte.

- Tan shading indicates historcal well data that was provided by DEQ.

J - Qualifer "J" - Estimated value. The analyte was present but less than the reporting limit.

ENVIRONMENTAL

APPENDIX F

Laboratory Analytical Reports

ANALYTICAL SUMMARY REPORT

April 13, 2017

CTA Construction and Environmental LLC
219 2nd Ave S
Great Falls, MT 59405-1804

Work Order: H17030482 Quote ID: H1384

Project Name: Carriage Trade Cleaners

Energy Laboratories Inc Helena MT received the following 10 samples for CTA Construction and Environmental LLC on 3/29/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H17030482-001	HGF-4s	03/28/17 10:22	03/29/17	Aqueous	8260-Volatile Organic Compounds-Extended List
H17030482-002	HGF-19s	03/28/17 11:02	03/29/17	Aqueous	Same As Above
H17030482-003	HGF-18s	03/28/17 13:18	03/29/17	Aqueous	Same As Above
H17030482-004	HGF-17s	03/29/17 8:58	03/29/17	Aqueous	Same As Above
H17030482-005	HGF-9s	03/29/17 8:37	03/29/17	Aqueous	Same As Above
H17030482-006	GHB-7s	03/29/17 9:25	03/29/17	Aqueous	8260-Volatile Organic Compounds-Short List
H17030482-007	GHB-54s	03/29/17 9:46	03/29/17	Aqueous	8260-Volatile Organic Compounds-Extended List
H17030482-008	GHB-46s	03/29/17 10:02	03/29/17	Aqueous	Same As Above
H17030482-009	Duplicate	03/29/17 10:30	03/29/17	Aqueous	Same As Above
H17030482-010	TB 6270	03/28/17 10:22	03/29/17	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Work Order: H17030482

Report Date: 04/13/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-001
Client Sample ID: HGF-4s

Report Date: 04/13/17
Collection Date: 03/28/17 10:22
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 17:45 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 17:45 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/07/17 17:34 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/07/17 17:34 / eli-b16
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/07/17 17:34 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-001
Client Sample ID: HGF-4s

Report Date: 04/13/17
Collection Date: 03/28/17 10:22
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 17:45 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 17:45 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 17:45 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 17:45 / eli-b
Surr: 1,2-Dichloroethane-d4	110	%REC		70-130		SW8260B	04/06/17 17:45 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/07/17 17:34 / eli-b16
Surr: Dibromofluoromethane	114	%REC		77-126		SW8260B	04/06/17 17:45 / eli-b
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	04/07/17 17:34 / eli-b16
Surr: p-Bromofluorobenzene	99.0	%REC		76-127		SW8260B	04/06/17 17:45 / eli-b
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	04/07/17 17:34 / eli-b16
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/06/17 17:45 / eli-b
Surr: Toluene-d8	92.0	%REC		79-122		SW8260B	04/07/17 17:34 / eli-b16

Report Definitions:
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ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-002
Client Sample ID: HGF-19s

Report Date: 04/13/17
Collection Date: 03/28/17 11:02
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 18:18 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 18:18 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/07/17 18:03 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/07/17 18:03 / eli-b16
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/07/17 18:03 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-002
Client Sample ID: HGF-19s

Report Date: 04/13/17
Collection Date: 03/28/17 11:02
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 18:18 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 18:18 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 18:18 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Tetrachloroethene	13	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Trichloroethene	1.2	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 18:18 / eli-b
Surr: 1,2-Dichloroethane-d4	108	%REC		70-130		SW8260B	04/06/17 18:18 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/07/17 18:03 / eli-b16
Surr: Dibromofluoromethane	112	%REC		77-126		SW8260B	04/06/17 18:18 / eli-b
Surr: Dibromofluoromethane	101	%REC		77-126		SW8260B	04/07/17 18:03 / eli-b16
Surr: p-Bromofluorobenzene	100	%REC		76-127		SW8260B	04/06/17 18:18 / eli-b
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	04/07/17 18:03 / eli-b16
Surr: Toluene-d8	103	%REC		79-122		SW8260B	04/06/17 18:18 / eli-b
Surr: Toluene-d8	91.0	%REC		79-122		SW8260B	04/07/17 18:03 / eli-b16

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-003
Client Sample ID: HGF-18s

Report Date: 04/13/17
Collection Date: 03/28/17 13:18
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 18:51 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 18:51 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/07/17 18:33 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/07/17 18:33 / eli-b16
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/07/17 18:33 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-003
Client Sample ID: HGF-18s

Report Date: 04/13/17
Collection Date: 03/28/17 13:18
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 18:51 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 18:51 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 18:51 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 18:51 / eli-b
Surr: 1,2-Dichloroethane-d4	111	%REC		70-130		SW8260B	04/06/17 18:51 / eli-b
Surr: 1,2-Dichloroethane-d4	108	%REC		70-130		SW8260B	04/07/17 18:33 / eli-b16
Surr: Dibromofluoromethane	115	%REC		77-126		SW8260B	04/06/17 18:51 / eli-b
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	04/07/17 18:33 / eli-b16
Surr: p-Bromofluorobenzene	100	%REC		76-127		SW8260B	04/06/17 18:51 / eli-b
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	04/07/17 18:33 / eli-b16
Surr: Toluene-d8	101	%REC		79-122		SW8260B	04/06/17 18:51 / eli-b
Surr: Toluene-d8	94.0	%REC		79-122		SW8260B	04/07/17 18:33 / eli-b16

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-004
Client Sample ID: HGF-17s

Report Date: 04/13/17
Collection Date: 03/29/17 08:58
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 19:24 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 19:24 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/07/17 19:02 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/07/17 19:02 / eli-b16
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/07/17 19:02 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
cis-1,2-Dichloroethene	0.26	ug/L	J	1.0		SW8260B	04/06/17 19:24 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-004
Client Sample ID: HGF-17s

Report Date: 04/13/17
Collection Date: 03/29/17 08:58
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 19:24 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 19:24 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 19:24 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Tetrachloroethene	22	ug/L		2.5		SW8260B	04/07/17 14:45 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Trichloroethene	5.4	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 19:24 / eli-b
Surr: 1,2-Dichloroethane-d4	110	%REC		70-130		SW8260B	04/06/17 19:24 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/07/17 19:02 / eli-b16
Surr: Dibromofluoromethane	113	%REC		77-126		SW8260B	04/06/17 19:24 / eli-b
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	04/07/17 19:02 / eli-b16
Surr: p-Bromofluorobenzene	101	%REC		76-127		SW8260B	04/06/17 19:24 / eli-b
Surr: p-Bromofluorobenzene	108	%REC		76-127		SW8260B	04/07/17 19:02 / eli-b16
Surr: Toluene-d8	100	%REC		79-122		SW8260B	04/06/17 19:24 / eli-b
Surr: Toluene-d8	92.0	%REC		79-122		SW8260B	04/07/17 19:02 / eli-b16

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-005
Client Sample ID: HGF-9s

Report Date: 04/13/17
Collection Date: 03/29/17 08:37
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 19:56 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 19:56 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/07/17 19:31 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/07/17 19:31 / eli-b16
Benzene	0.34	ug/L	J	1.0		SW8260B	04/06/17 19:56 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
n-Butylbenzene	0.42	ug/L	J	1.0		SW8260B	04/06/17 19:56 / eli-b
sec-Butylbenzene	0.96	ug/L	J	1.0		SW8260B	04/06/17 19:56 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/07/17 19:31 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2-Dichloroethane	50	ug/L		5.0		SW8260B	04/07/17 15:18 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2-Dichloropropane	0.39	ug/L	J	1.0		SW8260B	04/06/17 19:56 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-005
Client Sample ID: HGF-9s

Report Date: 04/13/17
Collection Date: 03/29/17 08:37
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 19:56 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Methyl tert-butyl ether (MTBE)	0.59	ug/L	J	1.0		SW8260B	04/06/17 19:56 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 19:56 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 19:56 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 19:56 / eli-b
Surr: 1,2-Dichloroethane-d4	94.0	%REC		70-130		SW8260B	04/06/17 19:56 / eli-b
Surr: 1,2-Dichloroethane-d4	105	%REC		70-130		SW8260B	04/07/17 19:31 / eli-b16
Surr: Dibromofluoromethane	107	%REC		77-126		SW8260B	04/06/17 19:56 / eli-b
Surr: Dibromofluoromethane	99.0	%REC		77-126		SW8260B	04/07/17 19:31 / eli-b16
Surr: p-Bromofluorobenzene	97.0	%REC		76-127		SW8260B	04/06/17 19:56 / eli-b
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	04/07/17 19:31 / eli-b16
Surr: Toluene-d8	96.0	%REC		79-122		SW8260B	04/06/17 19:56 / eli-b
Surr: Toluene-d8	90.0	%REC		79-122		SW8260B	04/07/17 19:31 / eli-b16

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-006
Client Sample ID: GHB-7s

Report Date: 04/13/17
Collection Date: 03/29/17 09:25
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
cis-1,2-Dichloroethene	2.3	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
trans-1,2-Dichloroethene	1.4	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 20:29 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Tetrachloroethene	2.3	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Trichloroethene	0.96	ug/L	J	1.0		SW8260B	04/06/17 20:29 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-006
Client Sample ID: GHB-7s

Report Date: 04/13/17
Collection Date: 03/29/17 09:25
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 20:29 / eli-b
Surr: Dibromofluoromethane	113	%REC		77-126		SW8260B	04/06/17 20:29 / eli-b
Surr: 1,2-Dichloroethane-d4	111	%REC		70-130		SW8260B	04/06/17 20:29 / eli-b
Surr: Toluene-d8	101	%REC		79-122		SW8260B	04/06/17 20:29 / eli-b
Surr: p-Bromofluorobenzene	101	%REC		76-127		SW8260B	04/06/17 20:29 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-007
Client Sample ID: GHB-54s

Report Date: 04/13/17
Collection Date: 03/29/17 09:46
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 21:02 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 21:02 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/08/17 23:26 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/08/17 23:26 / eli-b16
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/08/17 23:26 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-007
Client Sample ID: GHB-54s

Report Date: 04/13/17
Collection Date: 03/29/17 09:46
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 21:02 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 21:02 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 21:02 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Tetrachloroethene	6.9	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Trichloroethene	0.59	ug/L	J	1.0		SW8260B	04/06/17 21:02 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 21:02 / eli-b
Surr: 1,2-Dichloroethane-d4	113	%REC		70-130		SW8260B	04/06/17 21:02 / eli-b
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	04/08/17 23:26 / eli-b16
Surr: Dibromofluoromethane	115	%REC		77-126		SW8260B	04/06/17 21:02 / eli-b
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	04/08/17 23:26 / eli-b16
Surr: p-Bromofluorobenzene	96.0	%REC		76-127		SW8260B	04/06/17 21:02 / eli-b
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	04/08/17 23:26 / eli-b16
Surr: Toluene-d8	99.0	%REC		79-122		SW8260B	04/06/17 21:02 / eli-b
Surr: Toluene-d8	96.0	%REC		79-122		SW8260B	04/08/17 23:26 / eli-b16

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-008
Client Sample ID: GHB-46s

Report Date: 04/13/17
Collection Date: 03/29/17 10:02
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 21:35 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 21:35 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/08/17 23:55 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/08/17 23:55 / eli-b16
Benzene	0.95	ug/L	J	1.0		SW8260B	04/06/17 21:35 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
n-Butylbenzene	89	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
sec-Butylbenzene	27	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Carbon disulfide	3.8	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/08/17 23:55 / eli-b16
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
cis-1,2-Dichloroethene	7.4	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
trans-1,2-Dichloroethene	1.1	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Ethylbenzene	504	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-008
Client Sample ID: GHB-46s

Report Date: 04/13/17
Collection Date: 03/29/17 10:02
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 21:35 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Isopropylbenzene	60	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
p-Isopropyltoluene	11	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 21:35 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 21:35 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Naphthalene	123	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
n-Propylbenzene	250	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Tetrachloroethene	3.7	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Toluene	0.59	ug/L	J	1.0		SW8260B	04/06/17 21:35 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Trichloroethene	1.6	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
1,2,4-Trimethylbenzene	1240	ug/L		100		SW8260B	04/10/17 14:54 / eli-b
1,3,5-Trimethylbenzene	474	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 21:35 / eli-b
m+p-Xylenes	350	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
o-Xylene	66	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
Xylenes, Total	416	ug/L		25		SW8260B	04/07/17 15:50 / eli-b
Surr: 1,2-Dichloroethane-d4	86.0	%REC		70-130		SW8260B	04/06/17 21:35 / eli-b
Surr: 1,2-Dichloroethane-d4	92.0	%REC		70-130		SW8260B	04/08/17 23:55 / eli-b16
Surr: Dibromofluoromethane	117	%REC		77-126		SW8260B	04/06/17 21:35 / eli-b
Surr: Dibromofluoromethane	87.0	%REC		77-126		SW8260B	04/08/17 23:55 / eli-b16
Surr: p-Bromofluorobenzene	113	%REC		76-127		SW8260B	04/06/17 21:35 / eli-b
Surr: p-Bromofluorobenzene	131	%REC	S	76-127		SW8260B	04/08/17 23:55 / eli-b16
Surr: Toluene-d8	93.0	%REC		79-122		SW8260B	04/06/17 21:35 / eli-b
Surr: Toluene-d8	90.0	%REC		79-122		SW8260B	04/08/17 23:55 / eli-b16

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-009
Client Sample ID: Duplicate

Report Date: 04/13/17
Collection Date: 03/29/17 10:30
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/07/17 16:56 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/07/17 16:56 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/08/17 00:24 / eli-b16
Acrolein	ND	ug/L		20		SW8260B	04/07/17 16:56 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/08/17 00:24 / eli-b16
Acrylonitrile	ND	ug/L		20		SW8260B	04/07/17 16:56 / eli-b
Benzene	0.37	ug/L	J	1.0		SW8260B	04/07/17 16:56 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
n-Butylbenzene	0.52	ug/L	J	1.0		SW8260B	04/07/17 16:56 / eli-b
sec-Butylbenzene	1.2	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/08/17 00:24 / eli-b16
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2-Dichloroethane	46	ug/L		5.0		SW8260B	04/07/17 16:24 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2-Dichloropropane	0.43	ug/L	J	1.0		SW8260B	04/07/17 16:56 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-009
Client Sample ID: Duplicate

Report Date: 04/13/17
Collection Date: 03/29/17 10:30
DateReceived: 03/29/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
2-Hexanone	ND	ug/L		20		SW8260B	04/07/17 16:56 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Methyl tert-butyl ether (MTBE)	0.54	ug/L	J	1.0		SW8260B	04/07/17 16:56 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/07/17 16:56 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/07/17 16:56 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/07/17 16:56 / eli-b
Surr: 1,2-Dichloroethane-d4	88.0	%REC		70-130		SW8260B	04/08/17 00:24 / eli-b16
Surr: 1,2-Dichloroethane-d4	101	%REC		70-130		SW8260B	04/07/17 16:56 / eli-b
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	04/08/17 00:24 / eli-b16
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	04/07/17 16:56 / eli-b
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	04/08/17 00:24 / eli-b16
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	04/07/17 16:56 / eli-b
Surr: Toluene-d8	96.0	%REC		79-122		SW8260B	04/08/17 00:24 / eli-b16
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/07/17 16:56 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-010
Client Sample ID: TB 6270

Report Date: 04/13/17
Collection Date: 03/28/17 10:22
DateReceived: 03/29/17
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/06/17 17:13 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/06/17 17:13 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/06/17 17:13 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/06/17 17:13 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17030482-010
Client Sample ID: TB 6270

Report Date: 04/13/17
Collection Date: 03/28/17 10:22
DateReceived: 03/29/17
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/06/17 17:13 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/06/17 17:13 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/06/17 17:13 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/06/17 17:13 / eli-b
Surr: 1,2-Dichloroethane-d4	108	%REC		70-130		SW8260B	04/06/17 17:13 / eli-b
Surr: Dibromofluoromethane	113	%REC		77-126		SW8260B	04/06/17 17:13 / eli-b
Surr: p-Bromofluorobenzene	99.0	%REC		76-127		SW8260B	04/06/17 17:13 / eli-b
Surr: Toluene-d8	103	%REC		79-122		SW8260B	04/06/17 17:13 / eli-b

- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277651	
Lab ID: CCV040617	75	Continuing Calibration Verification Standard							04/06/17 10:18	
Acetonitrile		51.2	ug/L	20	102	70	130			
Acetone		42.8	ug/L	10	86	70	130			
Acrolein		52.0	ug/L	20	104	70	130			
Acrylonitrile		53.2	ug/L	10	106	70	130			
Benzene		4.80	ug/L	0.50	96	70	130			
Bromobenzene		4.88	ug/L	0.50	98	70	130			
Bromochloromethane		4.60	ug/L	0.50	92	70	130			
Bromodichloromethane		4.40	ug/L	0.50	88	70	130			
Bromoform		4.68	ug/L	0.50	94	70	130			
Bromomethane		3.62	ug/L	0.50	72	70	130			
n-Butylbenzene		4.76	ug/L	0.50	95	70	130			
sec-Butylbenzene		4.72	ug/L	0.50	94	70	130			
tert-Butylbenzene		4.88	ug/L	0.50	98	70	130			
Carbon disulfide		5.84	ug/L	0.50	117	70	130			
Carbon tetrachloride		4.88	ug/L	0.50	98	70	130			
Chlorobenzene		5.04	ug/L	0.50	101	70	130			
Chlorodibromomethane		4.76	ug/L	0.50	95	70	130			
Chloroethane		4.32	ug/L	0.50	86	70	130			
Chloroform		4.36	ug/L	0.50	87	80	120			
Chloromethane		4.48	ug/L	0.50	90	70	130			
2-Chlorotoluene		5.00	ug/L	0.50	100	70	130			
4-Chlorotoluene		4.88	ug/L	0.50	98	70	130			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	70	130			
1,2-Dibromoethane		5.52	ug/L	0.50	110	70	130			
Dibromomethane		5.12	ug/L	0.50	102	70	130			
1,2-Dichlorobenzene		4.84	ug/L	0.50	97	70	130			
1,3-Dichlorobenzene		5.12	ug/L	0.50	102	70	130			
1,4-Dichlorobenzene		4.96	ug/L	0.50	99	70	130			
Dichlorodifluoromethane		4.84	ug/L	0.50	97	70	130			
1,1-Dichloroethane		4.68	ug/L	0.50	94	70	130			
1,2-Dichloroethane		4.68	ug/L	0.50	94	70	130			
1,1-Dichloroethene		4.92	ug/L	0.50	98	80	120			
cis-1,2-Dichloroethene		5.28	ug/L	0.50	106	70	130			
trans-1,2-Dichloroethene		4.92	ug/L	0.50	98	70	130			
1,2-Dichloropropane		4.68	ug/L	0.50	94	80	120			
1,3-Dichloropropane		4.84	ug/L	0.50	97	70	130			
2,2-Dichloropropane		5.20	ug/L	0.50	104	70	130			
1,1-Dichloropropene		5.12	ug/L	0.50	102	70	130			
cis-1,3-Dichloropropene		4.80	ug/L	0.50	96	70	130			
trans-1,3-Dichloropropene		4.72	ug/L	0.50	94	70	130			
Ethylbenzene		4.88	ug/L	0.50	98	80	120			
Hexachlorobutadiene		4.84	ug/L	0.50	97	70	130			
2-Hexanone		48.0	ug/L	10	96	70	130			
Iodomethane		3.25	ug/L	1.0	65	70	130			S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277651	
Lab ID: CCV040617	75	Continuing Calibration Verification Standard							04/06/17 10:18	
Isopropylbenzene		4.72	ug/L	0.50	94	70	130			
p-Isopropyltoluene		4.80	ug/L	0.50	96	70	130			
Methyl tert-butyl ether (MTBE)		4.56	ug/L	0.50	91	70	130			
Methyl ethyl ketone		48.8	ug/L	10	98	70	130			
Methyl isobutyl ketone		48.0	ug/L	10	96	70	130			
Methylene chloride		5.20	ug/L	0.50	104	70	130			
Naphthalene		5.76	ug/L	0.50	115	70	130			
n-Propylbenzene		4.72	ug/L	0.50	94	70	130			
Styrene		4.84	ug/L	0.50	97	70	130			
1,1,1,2-Tetrachloroethane		4.72	ug/L	0.50	94	70	130			
1,1,2,2-Tetrachloroethane		4.88	ug/L	0.50	98	70	130			
Tetrachloroethene		4.92	ug/L	0.50	98	70	130			
Toluene		4.80	ug/L	0.50	96	80	120			
1,2,3-Trichlorobenzene		5.56	ug/L	0.50	111	70	130			
1,2,4-Trichlorobenzene		5.60	ug/L	0.50	112	70	130			
1,1,1-Trichloroethane		4.96	ug/L	0.50	99	70	130			
1,1,2-Trichloroethane		4.76	ug/L	0.50	95	70	130			
Trichloroethene		4.88	ug/L	0.50	98	70	130			
Trichlorofluoromethane		4.72	ug/L	0.50	94	70	130			
1,2,3-Trichloropropane		5.12	ug/L	0.50	102	70	130			
1,2,4-Trimethylbenzene		4.96	ug/L	0.50	99	70	130			
1,3,5-Trimethylbenzene		5.00	ug/L	0.50	100	70	130			
Vinyl acetate		5.00	ug/L	1.0	100	70	130			
Vinyl chloride		4.88	ug/L	0.50	98	80	120			
m+p-Xylenes		9.92	ug/L	0.50	99	70	130			
o-Xylene		4.96	ug/L	0.50	99	70	130			
Xylenes, Total		14.9	ug/L	0.50	99	70	130			
Surr: 1,2-Dichloroethane-d4				0.50	106	70	130			
Surr: Dibromofluoromethane				0.50	113	77	126			
Surr: p-Bromofluorobenzene				0.50	98	76	127			
Surr: Toluene-d8				0.50	102	79	122			
Method: SW8260B									Batch: B_R277651	
Lab ID: LCS040617	75	Laboratory Control Sample				Run: SUB-B277651			04/06/17 11:41	
Acetonitrile		52.8	ug/L	20	106	54	142			
Acetone		48.0	ug/L	10	96	62	130			
Acrolein		50.0	ug/L	20	100	22	203			
Acrylonitrile		48.0	ug/L	10	96	60	130			
Benzene		4.80	ug/L	0.50	96	71	133			
Bromobenzene		4.96	ug/L	0.50	99	78	133			
Bromochloromethane		4.60	ug/L	0.50	92	68	131			
Bromodichloromethane		4.76	ug/L	0.50	95	67	138			
Bromoform		4.72	ug/L	0.50	94	64	136			
Bromomethane		3.94	ug/L	0.50	79	60	138			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R277651
Lab ID: LCS040617	75	Laboratory Control Sample				Run: SUB-B277651				04/06/17 11:41
n-Butylbenzene		5.08	ug/L	0.50	102	72	135			
sec-Butylbenzene		4.96	ug/L	0.50	99	73	135			
tert-Butylbenzene		5.12	ug/L	0.50	102	69	137			
Carbon disulfide		6.24	ug/L	0.50	125	46	145			
Carbon tetrachloride		4.96	ug/L	0.50	99	61	144			
Chlorobenzene		5.08	ug/L	0.50	102	78	136			
Chlorodibromomethane		5.12	ug/L	0.50	102	72	136			
Chloroethane		4.56	ug/L	0.50	91	64	136			
Chloroform		4.72	ug/L	0.50	94	69	133			
Chloromethane		4.28	ug/L	0.50	86	63	149			
2-Chlorotoluene		5.12	ug/L	0.50	102	74	135			
4-Chlorotoluene		4.88	ug/L	0.50	98	79	135			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	63	125			
1,2-Dibromoethane		5.48	ug/L	0.50	110	75	131			
Dibromomethane		5.28	ug/L	0.50	106	72	133			
1,2-Dichlorobenzene		5.04	ug/L	0.50	101	78	129			
1,3-Dichlorobenzene		5.28	ug/L	0.50	106	79	132			
1,4-Dichlorobenzene		5.08	ug/L	0.50	102	78	131			
Dichlorodifluoromethane		4.88	ug/L	0.50	98	55	141			
1,1-Dichloroethane		4.92	ug/L	0.50	98	72	130			
1,2-Dichloroethane		5.04	ug/L	0.50	101	57	146			
1,1-Dichloroethene		5.08	ug/L	0.50	102	66	142			
cis-1,2-Dichloroethene		5.20	ug/L	0.50	104	74	133			
trans-1,2-Dichloroethene		5.24	ug/L	0.50	105	76	138			
1,2-Dichloropropane		4.68	ug/L	0.50	94	72	135			
1,3-Dichloropropane		4.52	ug/L	0.50	90	75	134			
2,2-Dichloropropane		4.96	ug/L	0.50	99	42	167			
1,1-Dichloropropene		4.80	ug/L	0.50	96	72	140			
cis-1,3-Dichloropropene		4.48	ug/L	0.50	90	75	132			
trans-1,3-Dichloropropene		4.56	ug/L	0.50	91	77	145			
Ethylbenzene		4.96	ug/L	0.50	99	78	131			
Hexachlorobutadiene		5.16	ug/L	0.50	103	65	141			
2-Hexanone		49.2	ug/L	10	98	72	131			
Iodomethane		3.51	ug/L	1.0	70	66	132			
Isopropylbenzene		4.96	ug/L	0.50	99	72	135			
p-Isopropyltoluene		4.92	ug/L	0.50	98	71	134			
Methyl tert-butyl ether (MTBE)		4.40	ug/L	0.50	88	58	151			
Methyl ethyl ketone		47.2	ug/L	10	94	55	145			
Methyl isobutyl ketone		47.6	ug/L	10	95	73	129			
Methylene chloride		5.28	ug/L	0.50	106	73	126			
Naphthalene		5.96	ug/L	0.50	119	55	139			
n-Propylbenzene		4.92	ug/L	0.50	98	70	139			
Styrene		5.00	ug/L	0.50	100	76	134			
1,1,1,2-Tetrachloroethane		4.68	ug/L	0.50	94	75	135			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R277651
Lab ID: LCS040617	75	Laboratory Control Sample				Run: SUB-B277651				04/06/17 11:41
1,1,2,2-Tetrachloroethane		4.64	ug/L	0.50	93	72	132			
Tetrachloroethene		5.04	ug/L	0.50	101	78	137			
Toluene		5.04	ug/L	0.50	101	78	134			
1,2,3-Trichlorobenzene		5.92	ug/L	0.50	118	42	152			
1,2,4-Trichlorobenzene		5.72	ug/L	0.50	114	58	142			
1,1,1-Trichloroethane		4.68	ug/L	0.50	94	64	141			
1,1,2-Trichloroethane		4.56	ug/L	0.50	91	72	133			
Trichloroethene		4.76	ug/L	0.50	95	75	138			
Trichlorofluoromethane		4.64	ug/L	0.50	93	58	139			
1,2,3-Trichloropropane		4.72	ug/L	0.50	94	67	133			
1,2,4-Trimethylbenzene		5.08	ug/L	0.50	102	71	129			
1,3,5-Trimethylbenzene		5.08	ug/L	0.50	102	68	135			
Vinyl acetate		4.32	ug/L	1.0	86	31	124			
Vinyl chloride		4.84	ug/L	0.50	97	66	140			
m+p-Xylenes		10.1	ug/L	0.50	101	78	133			
o-Xylene		4.96	ug/L	0.50	99	79	136			
Xylenes, Total		15.1	ug/L	0.50	101	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	108	70	130			
Surr: Dibromofluoromethane				0.50	106	77	126			
Surr: p-Bromofluorobenzene				0.50	97	76	127			
Surr: Toluene-d8				0.50	103	79	122			
Lab ID: BLK040617	73	Method Blank				Run: SUB-B277651				04/06/17 12:45
Acetonitrile		ND	ug/L	20						
Acetone		ND	ug/L	10						
Benzene		ND	ug/L	0.50						
Bromobenzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
n-Butylbenzene		ND	ug/L	0.50						
sec-Butylbenzene		ND	ug/L	0.50						
tert-Butylbenzene		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
2-Chlorotoluene		ND	ug/L	0.50						
4-Chlorotoluene		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R277651
Lab ID: BLK040617	73	Method Blank				Run: SUB-B277651				04/06/17 12:45
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,3-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
1,3-Dichloropropane		ND	ug/L	0.50						
2,2-Dichloropropane		ND	ug/L	0.50						
1,1-Dichloropropene		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
Hexachlorobutadiene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						
Isopropylbenzene		ND	ug/L	0.50						
p-Isopropyltoluene		ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Naphthalene		ND	ug/L	0.50						
n-Propylbenzene		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,2,3-Trichlorobenzene		ND	ug/L	0.50						
1,2,4-Trichlorobenzene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
1,2,4-Trimethylbenzene		ND	ug/L	0.50						
1,3,5-Trimethylbenzene		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277651	
Lab ID: BLK040617	73	Method Blank				Run: SUB-B277651			04/06/17 12:45	
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	105	70	130			
Surr: Dibromofluoromethane				0.50	110	77	126			
Surr: p-Bromofluorobenzene				0.50	102	76	127			
Surr: Toluene-d8				0.50	105	79	122			
Lab ID: B17040265-001AMS	75	Sample Matrix Spike				Run: SUB-B277651			04/06/17 15:36	
Acetonitrile		468	ug/L	200	94	54	142			
Acetone		476	ug/L	100	95	62	130			
Acrolein		516	ug/L	200	103	22	203			
Acrylonitrile		552	ug/L	100	110	60	130			
Benzene		49.2	ug/L	5.0	98	71	133			
Bromobenzene		50.4	ug/L	5.0	101	78	133			
Bromochloromethane		50.8	ug/L	5.0	102	68	131			
Bromodichloromethane		49.2	ug/L	5.0	98	67	138			
Bromoform		48.0	ug/L	5.0	96	64	136			
Bromomethane		41.2	ug/L	5.0	82	60	138			
n-Butylbenzene		46.4	ug/L	5.0	93	72	135			
sec-Butylbenzene		47.2	ug/L	5.0	94	73	135			
tert-Butylbenzene		49.6	ug/L	5.0	99	69	137			
Carbon disulfide		53.2	ug/L	5.0	106	46	145			
Carbon tetrachloride		50.4	ug/L	5.0	101	61	144			
Chlorobenzene		50.4	ug/L	5.0	101	78	136			
Chlorodibromomethane		52.0	ug/L	5.0	104	72	136			
Chloroethane		46.0	ug/L	5.0	92	64	136			
Chloroform		75.2	ug/L	5.0	95	69	133			
Chloromethane		39.9	ug/L	5.0	80	63	149			
2-Chlorotoluene		52.0	ug/L	5.0	104	74	135			
4-Chlorotoluene		49.6	ug/L	5.0	99	79	135			
1,2-Dibromo-3-chloropropane		50.8	ug/L	10	102	63	125			
1,2-Dibromoethane		55.2	ug/L	5.0	110	75	131			
Dibromomethane		54.0	ug/L	5.0	108	72	133			
1,2-Dichlorobenzene		50.4	ug/L	5.0	101	78	129			
1,3-Dichlorobenzene		52.0	ug/L	5.0	104	79	132			
1,4-Dichlorobenzene		50.8	ug/L	5.0	102	78	131			
Dichlorodifluoromethane		56.0	ug/L	5.0	112	55	141			
1,1-Dichloroethane		50.8	ug/L	5.0	102	72	130			
1,2-Dichloroethane		52.0	ug/L	5.0	104	57	146			
1,1-Dichloroethene		53.6	ug/L	5.0	107	66	142			
cis-1,2-Dichloroethene		53.6	ug/L	5.0	107	74	133			
trans-1,2-Dichloroethene		55.6	ug/L	5.0	111	76	138			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277651	
Lab ID: B17040265-001AMS	75	Sample Matrix Spike				Run: SUB-B277651			04/06/17 15:36	
1,2-Dichloropropane		44.8	ug/L	5.0	90	72	135			
1,3-Dichloropropane		45.2	ug/L	5.0	90	75	134			
2,2-Dichloropropane		54.0	ug/L	5.0	108	42	167			
1,1-Dichloropropene		48.0	ug/L	5.0	96	72	140			
cis-1,3-Dichloropropene		45.2	ug/L	5.0	90	75	132			
trans-1,3-Dichloropropene		46.8	ug/L	5.0	94	77	145			
Ethylbenzene		48.8	ug/L	5.0	98	78	131			
Hexachlorobutadiene		44.0	ug/L	5.0	88	65	141			
2-Hexanone		472	ug/L	100	94	72	131			
Iodomethane		30.5	ug/L	10	61	66	132			S
Isopropylbenzene		49.6	ug/L	5.0	99	72	135			
p-Isopropyltoluene		47.2	ug/L	5.0	94	71	134			
Methyl tert-butyl ether (MTBE)		47.2	ug/L	5.0	94	58	151			
Methyl ethyl ketone		456	ug/L	100	91	55	145			
Methyl isobutyl ketone		456	ug/L	100	91	73	129			
Methylene chloride		54.8	ug/L	5.0	110	73	126			
Naphthalene		52.4	ug/L	5.0	105	55	139			
n-Propylbenzene		48.0	ug/L	5.0	96	70	139			
Styrene		48.4	ug/L	5.0	97	76	134			
1,1,1,2-Tetrachloroethane		46.8	ug/L	5.0	94	75	135			
1,1,2,2-Tetrachloroethane		48.4	ug/L	5.0	97	72	132			
Tetrachloroethene		137	ug/L	5.0	75	78	137			S
Toluene		49.2	ug/L	5.0	98	78	134			
1,2,3-Trichlorobenzene		54.4	ug/L	5.0	109	42	152			
1,2,4-Trichlorobenzene		53.2	ug/L	5.0	106	58	142			
1,1,1-Trichloroethane		50.8	ug/L	5.0	102	64	141			
1,1,2-Trichloroethane		46.4	ug/L	5.0	93	72	133			
Trichloroethene		46.8	ug/L	5.0	94	75	138			
Trichlorofluoromethane		51.2	ug/L	5.0	102	58	139			
1,2,3-Trichloropropane		50.0	ug/L	5.0	100	67	133			
1,2,4-Trimethylbenzene		51.6	ug/L	5.0	103	71	129			
1,3,5-Trimethylbenzene		51.2	ug/L	5.0	102	68	135			
Vinyl acetate		43.2	ug/L	10	86	31	124			
Vinyl chloride		50.4	ug/L	5.0	101	66	140			
m+p-Xylenes		97.6	ug/L	5.0	98	78	133			
o-Xylene		49.2	ug/L	5.0	98	79	136			
Xylenes, Total		147	ug/L	5.0	98	78	136			
Surr: 1,2-Dichloroethane-d4				5.0	102	70	130			
Surr: Dibromofluoromethane				5.0	115	77	126			
Surr: p-Bromofluorobenzene				5.0	99	76	127			
Surr: Toluene-d8				5.0	100	79	122			
Lab ID: B17040265-001AMSD	75	Sample Matrix Spike Duplicate				Run: SUB-B277651			04/06/17 16:07	
Acetonitrile		472	ug/L	200	94	54	142	0.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277651	
Lab ID: B17040265-001AMSD	75	Sample Matrix Spike Duplicate				Run: SUB-B277651			04/06/17 16:07	
Acetone		420	ug/L	100	84	62	130	12	20	
Acrolein		544	ug/L	200	109	22	203	5.3	20	
Acrylonitrile		516	ug/L	100	103	60	130	6.7	20	
Benzene		48.0	ug/L	5.0	96	71	133	2.5	20	
Bromobenzene		48.8	ug/L	5.0	98	78	133	3.2	20	
Bromochloromethane		49.6	ug/L	5.0	99	68	131	2.4	20	
Bromodichloromethane		49.6	ug/L	5.0	99	67	138	0.8	20	
Bromoform		47.2	ug/L	5.0	94	64	136	1.7	20	
Bromomethane		41.2	ug/L	5.0	82	60	138	0.0	20	
n-Butylbenzene		45.6	ug/L	5.0	91	72	135	1.7	20	
sec-Butylbenzene		44.8	ug/L	5.0	90	73	135	5.2	20	
tert-Butylbenzene		45.6	ug/L	5.0	91	69	137	8.4	20	
Carbon disulfide		52.4	ug/L	5.0	105	46	145	1.5	20	
Carbon tetrachloride		49.6	ug/L	5.0	99	61	144	1.6	20	
Chlorobenzene		50.4	ug/L	5.0	101	78	136	0.0	20	
Chlorodibromomethane		52.4	ug/L	5.0	105	72	136	0.8	20	
Chloroethane		55.2	ug/L	5.0	110	64	136	18	20	
Chloroform		73.6	ug/L	5.0	91	69	133	2.2	20	
Chloromethane		40.0	ug/L	5.0	80	63	149	0.2	20	
2-Chlorotoluene		48.4	ug/L	5.0	97	74	135	7.2	20	
4-Chlorotoluene		46.4	ug/L	5.0	93	79	135	6.7	20	
1,2-Dibromo-3-chloropropane		46.0	ug/L	10	92	63	125	9.9	20	
1,2-Dibromoethane		55.6	ug/L	5.0	111	75	131	0.7	20	
Dibromomethane		55.6	ug/L	5.0	111	72	133	2.9	20	
1,2-Dichlorobenzene		49.2	ug/L	5.0	98	78	129	2.4	20	
1,3-Dichlorobenzene		50.0	ug/L	5.0	100	79	132	3.9	20	
1,4-Dichlorobenzene		49.6	ug/L	5.0	99	78	131	2.4	20	
Dichlorodifluoromethane		53.2	ug/L	5.0	106	55	141	5.1	20	
1,1-Dichloroethane		47.2	ug/L	5.0	94	72	130	7.3	20	
1,2-Dichloroethane		48.0	ug/L	5.0	96	57	146	8.0	20	
1,1-Dichloroethene		48.4	ug/L	5.0	97	66	142	10	20	
cis-1,2-Dichloroethene		52.8	ug/L	5.0	106	74	133	1.5	20	
trans-1,2-Dichloroethene		54.4	ug/L	5.0	109	76	138	2.2	20	
1,2-Dichloropropane		46.0	ug/L	5.0	92	72	135	2.6	20	
1,3-Dichloropropane		46.4	ug/L	5.0	93	75	134	2.6	20	
2,2-Dichloropropane		52.0	ug/L	5.0	104	42	167	3.8	20	
1,1-Dichloropropene		47.6	ug/L	5.0	95	72	140	0.8	20	
cis-1,3-Dichloropropene		45.2	ug/L	5.0	90	75	132	0.0	20	
trans-1,3-Dichloropropene		46.8	ug/L	5.0	94	77	145	0.0	20	
Ethylbenzene		48.0	ug/L	5.0	96	78	131	1.7	20	
Hexachlorobutadiene		44.4	ug/L	5.0	89	65	141	0.9	20	
2-Hexanone		484	ug/L	100	97	72	131	2.5	20	
Iodomethane		33.2	ug/L	10	66	66	132	8.5	20	
Isopropylbenzene		46.0	ug/L	5.0	92	72	135	7.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277651	
Lab ID: B17040265-001AMSD	75	Sample Matrix Spike Duplicate				Run: SUB-B277651			04/06/17 16:07	
p-Isopropyltoluene		44.0	ug/L	5.0	88	71	134	7.0	20	
Methyl tert-butyl ether (MTBE)		45.6	ug/L	5.0	91	58	151	3.4	20	
Methyl ethyl ketone		444	ug/L	100	89	55	145	2.7	20	
Methyl isobutyl ketone		476	ug/L	100	95	73	129	4.3	20	
Methylene chloride		52.4	ug/L	5.0	105	73	126	4.5	20	
Naphthalene		56.0	ug/L	5.0	112	55	139	6.6	20	
n-Propylbenzene		44.4	ug/L	5.0	89	70	139	7.8	20	
Styrene		49.2	ug/L	5.0	98	76	134	1.6	20	
1,1,1,2-Tetrachloroethane		46.4	ug/L	5.0	93	75	135	0.9	20	
1,1,2,2-Tetrachloroethane		47.2	ug/L	5.0	94	72	132	2.5	20	
Tetrachloroethene		137	ug/L	5.0	76	78	137	0.3	20	S
Toluene		48.4	ug/L	5.0	97	78	134	1.6	20	
1,2,3-Trichlorobenzene		58.0	ug/L	5.0	116	42	152	6.4	20	
1,2,4-Trichlorobenzene		53.6	ug/L	5.0	107	58	142	0.7	20	
1,1,1-Trichloroethane		48.0	ug/L	5.0	96	64	141	5.7	20	
1,1,2-Trichloroethane		47.2	ug/L	5.0	94	72	133	1.7	20	
Trichloroethene		47.2	ug/L	5.0	94	75	138	0.9	20	
Trichlorofluoromethane		47.2	ug/L	5.0	94	58	139	8.1	20	
1,2,3-Trichloropropane		47.6	ug/L	5.0	95	67	133	4.9	20	
1,2,4-Trimethylbenzene		48.8	ug/L	5.0	98	71	129	5.6	20	
1,3,5-Trimethylbenzene		47.6	ug/L	5.0	95	68	135	7.3	20	
Vinyl acetate		41.6	ug/L	10	83	31	124	3.8	20	
Vinyl chloride		50.4	ug/L	5.0	101	66	140	0.0	20	
m+p-Xylenes		98.0	ug/L	5.0	98	78	133	0.4	20	
o-Xylene		49.2	ug/L	5.0	98	79	136	0.0	20	
Xylenes, Total		147	ug/L	5.0	98	78	136			
Surr: 1,2-Dichloroethane-d4				5.0	102	70	130			
Surr: Dibromofluoromethane				5.0	110	77	126			
Surr: p-Bromofluorobenzene				5.0	94	76	127			
Surr: Toluene-d8				5.0	101	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277674	
Lab ID: ccv040717	7	Continuing Calibration Verification Standard							04/07/17 08:16	
Acrolein		59.6	ug/L	20	119	70	130			
Acrylonitrile		49.6	ug/L	10	99	70	130			
2-Chloroethyl vinyl ether		3.46	ug/L	0.50	69	70	130			S
Surr: 1,2-Dichloroethane-d4				0.50	103	70	130			
Surr: Dibromofluoromethane				0.50	94	77	126			
Surr: p-Bromofluorobenzene				0.50	102	76	127			
Surr: Toluene-d8				0.50	95	79	122			
Method: SW8260B									Batch: B_R277674	
Lab ID: lcs040717	7	Laboratory Control Sample				Run: SUB-B277674			04/07/17 09:44	
Acrolein		58.0	ug/L	20	116	22	203			
Acrylonitrile		51.6	ug/L	10	103	60	130			
2-Chloroethyl vinyl ether		3.56	ug/L	0.50	71	64	132			
Surr: 1,2-Dichloroethane-d4				0.50	107	70	130			
Surr: Dibromofluoromethane				0.50	97	77	126			
Surr: p-Bromofluorobenzene				0.50	100	76	127			
Surr: Toluene-d8				0.50	92	79	122			
Lab ID: blk040717	7	Method Blank				Run: SUB-B277674			04/07/17 11:41	
Acrolein		ND	ug/L	20						
Acrylonitrile		ND	ug/L	10						
2-Chloroethyl vinyl ether		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	107	70	130			
Surr: Dibromofluoromethane				0.50	101	77	126			
Surr: p-Bromofluorobenzene				0.50	106	76	127			
Surr: Toluene-d8				0.50	92	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277727	
Lab ID: ccvA040717	7	Continuing Calibration Verification Standard							04/07/17 20:59	
Acrolein		60.4	ug/L	20	121	70	130			
Acrylonitrile		56.0	ug/L	10	112	70	130			
2-Chloroethyl vinyl ether		3.69	ug/L	0.50	74	70	130			
Surr: 1,2-Dichloroethane-d4				0.50	113	70	130			
Surr: Dibromofluoromethane				0.50	100	77	126			
Surr: p-Bromofluorobenzene				0.50	104	76	127			
Surr: Toluene-d8				0.50	91	79	122			
Method: SW8260B									Batch: B_R277727	
Lab ID: lcsA040717	7	Laboratory Control Sample				Run: SUB-B277727			04/07/17 21:28	
Acrolein		50.4	ug/L	20	101	22	203			
Acrylonitrile		52.0	ug/L	10	104	60	130			
2-Chloroethyl vinyl ether		3.65	ug/L	0.50	73	64	132			
Surr: 1,2-Dichloroethane-d4				0.50	115	70	130			
Surr: Dibromofluoromethane				0.50	103	77	126			
Surr: p-Bromofluorobenzene				0.50	107	76	127			
Surr: Toluene-d8				0.50	92	79	122			
Lab ID: blkA040717	7	Method Blank				Run: SUB-B277727			04/07/17 22:27	
Acrolein		ND	ug/L	20						
Acrylonitrile		ND	ug/L	10						
2-Chloroethyl vinyl ether		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	95	70	130			
Surr: Dibromofluoromethane				0.50	98	77	126			
Surr: p-Bromofluorobenzene				0.50	111	76	127			
Surr: Toluene-d8				0.50	96	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277755	
Lab ID: CCV040717	76	Continuing Calibration Verification Standard							04/07/17 11:25	
Acetonitrile		47.6	ug/L	20	95	70	130			
Acetone		49.2	ug/L	10	98	70	130			
Acrolein		50.0	ug/L	20	100	70	130			
Acrylonitrile		53.6	ug/L	10	107	70	130			
Benzene		4.92	ug/L	0.50	98	70	130			
Bromobenzene		5.04	ug/L	0.50	101	70	130			
Bromochloromethane		4.56	ug/L	0.50	91	70	130			
Bromodichloromethane		4.68	ug/L	0.50	94	70	130			
Bromoform		4.88	ug/L	0.50	98	70	130			
Bromomethane		3.73	ug/L	0.50	75	70	130			
n-Butylbenzene		4.80	ug/L	0.50	96	70	130			
sec-Butylbenzene		4.80	ug/L	0.50	96	70	130			
tert-Butylbenzene		4.92	ug/L	0.50	98	70	130			
Carbon disulfide		5.04	ug/L	0.50	101	70	130			
Carbon tetrachloride		4.96	ug/L	0.50	99	70	130			
Chlorobenzene		5.28	ug/L	0.50	106	70	130			
Chlorodibromomethane		5.16	ug/L	0.50	103	70	130			
Chloroethane		4.40	ug/L	0.50	88	70	130			
2-Chloroethyl vinyl ether		ND	ug/L	0.50	0	70	130			S
Chloroform		4.56	ug/L	0.50	91	80	120			
Chloromethane		3.94	ug/L	0.50	79	70	130			
2-Chlorotoluene		5.04	ug/L	0.50	101	70	130			
4-Chlorotoluene		4.92	ug/L	0.50	98	70	130			
1,2-Dibromo-3-chloropropane		5.80	ug/L	1.0	116	70	130			
1,2-Dibromoethane		6.00	ug/L	0.50	120	70	130			
Dibromomethane		5.32	ug/L	0.50	106	70	130			
1,2-Dichlorobenzene		5.12	ug/L	0.50	102	70	130			
1,3-Dichlorobenzene		5.28	ug/L	0.50	106	70	130			
1,4-Dichlorobenzene		5.16	ug/L	0.50	103	70	130			
Dichlorodifluoromethane		4.16	ug/L	0.50	83	70	130			
1,1-Dichloroethane		5.04	ug/L	0.50	101	70	130			
1,2-Dichloroethane		5.36	ug/L	0.50	107	70	130			
1,1-Dichloroethene		4.96	ug/L	0.50	99	80	120			
cis-1,2-Dichloroethene		5.12	ug/L	0.50	102	70	130			
trans-1,2-Dichloroethene		5.60	ug/L	0.50	112	70	130			
1,2-Dichloropropane		5.00	ug/L	0.50	100	80	120			
1,3-Dichloropropane		5.16	ug/L	0.50	103	70	130			
2,2-Dichloropropane		4.96	ug/L	0.50	99	70	130			
1,1-Dichloropropene		5.08	ug/L	0.50	102	70	130			
cis-1,3-Dichloropropene		5.12	ug/L	0.50	102	70	130			
trans-1,3-Dichloropropene		5.04	ug/L	0.50	101	70	130			
Ethylbenzene		5.00	ug/L	0.50	100	80	120			
Hexachlorobutadiene		5.00	ug/L	0.50	100	70	130			
2-Hexanone		49.2	ug/L	10	98	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277755	
Lab ID: CCV040717	76	Continuing Calibration Verification Standard							04/07/17 11:25	
Iodomethane		2.88	ug/L	1.0	58	70	130			S
Isopropylbenzene		4.80	ug/L	0.50	96	70	130			
p-Isopropyltoluene		4.88	ug/L	0.50	98	70	130			
Methyl tert-butyl ether (MTBE)		4.92	ug/L	0.50	98	70	130			
Methyl ethyl ketone		50.0	ug/L	10	100	70	130			
Methyl isobutyl ketone		48.4	ug/L	10	97	70	130			
Methylene chloride		5.28	ug/L	0.50	106	70	130			
Naphthalene		6.04	ug/L	0.50	121	70	130			
n-Propylbenzene		4.80	ug/L	0.50	96	70	130			
Styrene		5.12	ug/L	0.50	102	70	130			
1,1,1,2-Tetrachloroethane		4.96	ug/L	0.50	99	70	130			
1,1,2,2-Tetrachloroethane		5.24	ug/L	0.50	105	70	130			
Tetrachloroethene		5.08	ug/L	0.50	102	70	130			
Toluene		5.08	ug/L	0.50	102	80	120			
1,2,3-Trichlorobenzene		6.20	ug/L	0.50	124	70	130			
1,2,4-Trichlorobenzene		5.84	ug/L	0.50	117	70	130			
1,1,1-Trichloroethane		4.84	ug/L	0.50	97	70	130			
1,1,2-Trichloroethane		5.24	ug/L	0.50	105	70	130			
Trichloroethene		4.96	ug/L	0.50	99	70	130			
Trichlorofluoromethane		4.84	ug/L	0.50	97	70	130			
1,2,3-Trichloropropane		5.44	ug/L	0.50	109	70	130			
1,2,4-Trimethylbenzene		5.12	ug/L	0.50	102	70	130			
1,3,5-Trimethylbenzene		4.96	ug/L	0.50	99	70	130			
Vinyl acetate		4.48	ug/L	1.0	90	70	130			
Vinyl chloride		4.40	ug/L	0.50	88	80	120			
m+p-Xylenes		10.3	ug/L	0.50	103	70	130			
o-Xylene		5.28	ug/L	0.50	106	70	130			
Xylenes, Total		15.6	ug/L	0.50	104	70	130			
Surr: 1,2-Dichloroethane-d4				0.50	102	70	130			
Surr: Dibromofluoromethane				0.50	108	77	126			
Surr: p-Bromofluorobenzene				0.50	97	76	127			
Surr: Toluene-d8				0.50	104	79	122			
Method: SW8260B									Batch: B_R277755	
Lab ID: LCS040717	76	Laboratory Control Sample				Run: SUB-B277755			04/07/17 12:17	
Acetonitrile		42.0	ug/L	20	84	54	142			
Acetone		43.2	ug/L	10	86	62	130			
Acrolein		52.4	ug/L	20	105	22	203			
Acrylonitrile		54.4	ug/L	10	109	60	130			
Benzene		4.64	ug/L	0.50	93	71	133			
Bromobenzene		4.80	ug/L	0.50	96	78	133			
Bromochloromethane		4.60	ug/L	0.50	92	68	131			
Bromodichloromethane		4.68	ug/L	0.50	94	67	138			
Bromoform		4.68	ug/L	0.50	94	64	136			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277755	
Lab ID: LCS040717	76	Laboratory Control Sample				Run: SUB-B277755			04/07/17 12:17	
Bromomethane		3.84	ug/L	0.50	77	60	138			
n-Butylbenzene		4.76	ug/L	0.50	95	72	135			
sec-Butylbenzene		4.72	ug/L	0.50	94	73	135			
tert-Butylbenzene		4.64	ug/L	0.50	93	69	137			
Carbon disulfide		5.40	ug/L	0.50	108	46	145			
Carbon tetrachloride		4.68	ug/L	0.50	94	61	144			
Chlorobenzene		4.96	ug/L	0.50	99	78	136			
Chlorodibromomethane		5.28	ug/L	0.50	106	72	136			
Chloroethane		4.16	ug/L	0.50	83	64	136			
2-Chloroethyl vinyl ether		ND	ug/L	0.50	0	64	132			S
Chloroform		4.40	ug/L	0.50	88	69	133			
Chloromethane		3.87	ug/L	0.50	77	63	149			
2-Chlorotoluene		4.84	ug/L	0.50	97	74	135			
4-Chlorotoluene		4.64	ug/L	0.50	93	79	135			
1,2-Dibromo-3-chloropropane		4.76	ug/L	1.0	95	63	125			
1,2-Dibromoethane		5.52	ug/L	0.50	110	75	131			
Dibromomethane		5.36	ug/L	0.50	107	72	133			
1,2-Dichlorobenzene		4.84	ug/L	0.50	97	78	129			
1,3-Dichlorobenzene		5.08	ug/L	0.50	102	79	132			
1,4-Dichlorobenzene		4.92	ug/L	0.50	98	78	131			
Dichlorodifluoromethane		4.68	ug/L	0.50	94	55	141			
1,1-Dichloroethane		4.60	ug/L	0.50	92	72	130			
1,2-Dichloroethane		4.96	ug/L	0.50	99	57	146			
1,1-Dichloroethene		4.64	ug/L	0.50	93	66	142			
cis-1,2-Dichloroethene		5.40	ug/L	0.50	108	74	133			
trans-1,2-Dichloroethene		5.32	ug/L	0.50	106	76	138			
1,2-Dichloropropane		4.52	ug/L	0.50	90	72	135			
1,3-Dichloropropane		4.56	ug/L	0.50	91	75	134			
2,2-Dichloropropane		4.80	ug/L	0.50	96	42	167			
1,1-Dichloropropene		4.52	ug/L	0.50	90	72	140			
cis-1,3-Dichloropropene		4.44	ug/L	0.50	89	75	132			
trans-1,3-Dichloropropene		4.68	ug/L	0.50	94	77	145			
Ethylbenzene		4.80	ug/L	0.50	96	78	131			
Hexachlorobutadiene		4.76	ug/L	0.50	95	65	141			
2-Hexanone		49.6	ug/L	10	99	72	131			
Iodomethane		3.02	ug/L	1.0	60	66	132			S
Isopropylbenzene		4.60	ug/L	0.50	92	72	135			
p-Isopropyltoluene		4.64	ug/L	0.50	93	71	134			
Methyl tert-butyl ether (MTBE)		4.12	ug/L	0.50	82	58	151			
Methyl ethyl ketone		46.8	ug/L	10	94	55	145			
Methyl isobutyl ketone		48.0	ug/L	10	96	73	129			
Methylene chloride		5.08	ug/L	0.50	102	73	126			
Naphthalene		5.76	ug/L	0.50	115	55	139			
n-Propylbenzene		4.56	ug/L	0.50	91	70	139			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277755	
Lab ID: LCS040717	76	Laboratory Control Sample				Run: SUB-B277755			04/07/17 12:17	
Styrene		5.00	ug/L	0.50	100	76	134			
1,1,1,2-Tetrachloroethane		4.72	ug/L	0.50	94	75	135			
1,1,2,2-Tetrachloroethane		4.56	ug/L	0.50	91	72	132			
Tetrachloroethene		4.92	ug/L	0.50	98	78	137			
Toluene		4.88	ug/L	0.50	98	78	134			
1,2,3-Trichlorobenzene		5.84	ug/L	0.50	117	42	152			
1,2,4-Trichlorobenzene		5.56	ug/L	0.50	111	58	142			
1,1,1-Trichloroethane		4.12	ug/L	0.50	82	64	141			
1,1,2-Trichloroethane		4.68	ug/L	0.50	94	72	133			
Trichloroethene		4.52	ug/L	0.50	90	75	138			
Trichlorofluoromethane		4.36	ug/L	0.50	87	58	139			
1,2,3-Trichloropropane		4.68	ug/L	0.50	94	67	133			
1,2,4-Trimethylbenzene		4.80	ug/L	0.50	96	71	129			
1,3,5-Trimethylbenzene		4.76	ug/L	0.50	95	68	135			
Vinyl acetate		3.91	ug/L	1.0	78	31	124			
Vinyl chloride		4.68	ug/L	0.50	94	66	140			
m+p-Xylenes		9.80	ug/L	0.50	98	78	133			
o-Xylene		4.92	ug/L	0.50	98	79	136			
Xylenes, Total		14.7	ug/L	0.50	98	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	108	70	130			
Surr: Dibromofluoromethane				0.50	115	77	126			
Surr: p-Bromofluorobenzene				0.50	94	76	127			
Surr: Toluene-d8				0.50	103	79	122			
Lab ID: BLK040717	76	Method Blank				Run: SUB-B277755			04/07/17 13:22	
Acetonitrile		ND	ug/L	20						
Acetone		ND	ug/L	10						
Acrolein		ND	ug/L	20						
Acrylonitrile		ND	ug/L	10						
Benzene		ND	ug/L	0.50						
Bromobenzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
n-Butylbenzene		ND	ug/L	0.50						
sec-Butylbenzene		ND	ug/L	0.50						
tert-Butylbenzene		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
2-Chloroethyl vinyl ether		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

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QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R277755
Lab ID: BLK040717	76	Method Blank				Run: SUB-B277755				04/07/17 13:22
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
2-Chlorotoluene		ND	ug/L	0.50						
4-Chlorotoluene		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,3-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
1,3-Dichloropropane		ND	ug/L	0.50						
2,2-Dichloropropane		ND	ug/L	0.50						
1,1-Dichloropropene		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
Hexachlorobutadiene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						
Isopropylbenzene		ND	ug/L	0.50						
p-Isopropyltoluene		ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Naphthalene		ND	ug/L	0.50						
n-Propylbenzene		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.42						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,2,3-Trichlorobenzene		ND	ug/L	0.50						
1,2,4-Trichlorobenzene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277755	
Lab ID: BLK040717	76	Method Blank				Run: SUB-B277755			04/07/17 13:22	
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
1,2,4-Trimethylbenzene		ND	ug/L	0.50						
1,3,5-Trimethylbenzene		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	106	70	130			
Surr: Dibromofluoromethane				0.50	111	77	126			
Surr: p-Bromofluorobenzene				0.50	100	76	127			
Surr: Toluene-d8				0.50	103	79	122			
Lab ID: B17040178-001GMS	75	Sample Matrix Spike				Run: SUB-B277755			04/07/17 20:48	
Acetonitrile		57.6	ug/L	20	115	54	142			
Acetone		68.0	ug/L	10	103	62	130			
Acrolein		44.4	ug/L	20	89	22	203			
Acrylonitrile		54.4	ug/L	10	109	60	130			
Benzene		4.96	ug/L	0.50	99	71	133			
Bromobenzene		5.00	ug/L	0.50	100	78	133			
Bromochloromethane		5.12	ug/L	0.50	102	68	131			
Bromodichloromethane		4.88	ug/L	0.50	98	67	138			
Bromoform		5.28	ug/L	0.50	106	64	136			
Bromomethane		4.08	ug/L	0.50	82	60	138			
n-Butylbenzene		4.12	ug/L	0.50	82	72	135			
sec-Butylbenzene		4.36	ug/L	0.50	87	73	135			
tert-Butylbenzene		4.48	ug/L	0.50	90	69	137			
Carbon disulfide		5.00	ug/L	0.50	100	46	145			
Carbon tetrachloride		4.84	ug/L	0.50	97	61	144			
Chlorobenzene		5.24	ug/L	0.50	105	78	136			
Chlorodibromomethane		5.44	ug/L	0.50	109	72	136			
Chloroethane		5.04	ug/L	0.50	101	64	136			
Chloroform		4.60	ug/L	0.50	92	69	133			
Chloromethane		4.20	ug/L	0.50	84	63	149			
2-Chlorotoluene		5.08	ug/L	0.50	102	74	135			
4-Chlorotoluene		4.72	ug/L	0.50	94	79	135			
1,2-Dibromo-3-chloropropane		5.48	ug/L	1.0	110	63	125			
1,2-Dibromoethane		6.20	ug/L	0.50	124	75	131			
Dibromomethane		5.60	ug/L	0.50	112	72	133			
1,2-Dichlorobenzene		5.04	ug/L	0.50	101	78	129			
1,3-Dichlorobenzene		5.12	ug/L	0.50	102	79	132			
1,4-Dichlorobenzene		5.08	ug/L	0.50	102	78	131			
Dichlorodifluoromethane		5.52	ug/L	0.50	110	55	141			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277755	
Lab ID: B17040178-001GMS	75	Sample Matrix Spike				Run: SUB-B277755			04/07/17 20:48	
1,1-Dichloroethane		5.36	ug/L	0.50	107	72	130			
1,2-Dichloroethane		5.32	ug/L	0.50	106	57	146			
1,1-Dichloroethene		4.72	ug/L	0.50	94	66	142			
cis-1,2-Dichloroethene		5.52	ug/L	0.50	110	74	133			
trans-1,2-Dichloroethene		5.44	ug/L	0.50	109	76	138			
1,2-Dichloropropane		4.88	ug/L	0.50	98	72	135			
1,3-Dichloropropane		4.88	ug/L	0.50	98	75	134			
2,2-Dichloropropane		4.68	ug/L	0.50	94	42	167			
1,1-Dichloropropene		4.80	ug/L	0.50	96	72	140			
cis-1,3-Dichloropropene		4.76	ug/L	0.50	95	75	132			
trans-1,3-Dichloropropene		5.24	ug/L	0.50	105	77	145			
Ethylbenzene		4.96	ug/L	0.50	99	78	131			
Hexachlorobutadiene		3.95	ug/L	0.50	79	65	141			
2-Hexanone		54.0	ug/L	10	108	72	131			
Iodomethane		1.90	ug/L	1.0	38	66	132			S
Isopropylbenzene		4.64	ug/L	0.50	93	72	135			
p-Isopropyltoluene		4.32	ug/L	0.50	86	71	134			
Methyl tert-butyl ether (MTBE)		4.92	ug/L	0.50	98	58	151			
Methyl ethyl ketone		66.0	ug/L	10	95	55	145			
Methyl isobutyl ketone		52.0	ug/L	10	104	73	129			
Methylene chloride		5.44	ug/L	0.50	109	73	126			
Naphthalene		5.96	ug/L	0.50	119	55	139			
n-Propylbenzene		4.48	ug/L	0.50	90	70	139			
Styrene		5.12	ug/L	0.50	102	76	134			
1,1,1,2-Tetrachloroethane		5.12	ug/L	0.50	102	75	135			
1,1,2,2-Tetrachloroethane		5.04	ug/L	0.50	101	72	132			
Tetrachloroethene		5.04	ug/L	0.50	101	78	137			
Toluene		5.04	ug/L	0.50	101	78	134			
1,2,3-Trichlorobenzene		5.48	ug/L	0.50	110	42	152			
1,2,4-Trichlorobenzene		5.28	ug/L	0.50	106	58	142			
1,1,1-Trichloroethane		4.68	ug/L	0.50	94	64	141			
1,1,2-Trichloroethane		5.00	ug/L	0.50	100	72	133			
Trichloroethene		4.80	ug/L	0.50	96	75	138			
Trichlorofluoromethane		5.28	ug/L	0.50	106	58	139			
1,2,3-Trichloropropane		4.96	ug/L	0.50	99	67	133			
1,2,4-Trimethylbenzene		4.84	ug/L	0.50	97	71	129			
1,3,5-Trimethylbenzene		4.80	ug/L	0.50	96	68	135			
Vinyl acetate		2.95	ug/L	1.0	59	31	124			
Vinyl chloride		5.32	ug/L	0.50	106	66	140			
m+p-Xylenes		10.0	ug/L	0.50	100	78	133			
o-Xylene		5.20	ug/L	0.50	104	79	136			
Xylenes, Total		15.2	ug/L	0.50	102	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	98	70	130			
Surr: Dibromofluoromethane				0.50	107	77	126			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277755	
Lab ID: B17040178-001GMS	75	Sample Matrix Spike				Run: SUB-B277755			04/07/17 20:48	
Surr: p-Bromofluorobenzene				0.50	95	76	127			
Surr: Toluene-d8				0.50	103	79	122			
Lab ID: B17040178-001GMSD	75	Sample Matrix Spike Duplicate				Run: SUB-B277755			04/07/17 21:21	
Acetonitrile		38.6	ug/L	20	77	54	142	40	20	R
Acetone		64.4	ug/L	10	96	62	130	5.4	20	
Acrolein		40.8	ug/L	20	82	22	203	8.5	20	
Acrylonitrile		52.0	ug/L	10	104	60	130	4.5	20	
Benzene		5.00	ug/L	0.50	100	71	133	0.8	20	
Bromobenzene		5.04	ug/L	0.50	101	78	133	0.8	20	
Bromochloromethane		5.12	ug/L	0.50	102	68	131	0.0	20	
Bromodichloromethane		4.92	ug/L	0.50	98	67	138	0.8	20	
Bromoform		5.36	ug/L	0.50	107	64	136	1.5	20	
Bromomethane		3.87	ug/L	0.50	77	60	138	5.3	20	
n-Butylbenzene		4.28	ug/L	0.50	86	72	135	3.8	20	
sec-Butylbenzene		4.48	ug/L	0.50	90	73	135	2.7	20	
tert-Butylbenzene		4.64	ug/L	0.50	93	69	137	3.5	20	
Carbon disulfide		4.84	ug/L	0.50	97	46	145	3.3	20	
Carbon tetrachloride		5.00	ug/L	0.50	100	61	144	3.3	20	
Chlorobenzene		5.20	ug/L	0.50	104	78	136	0.8	20	
Chlorodibromomethane		5.48	ug/L	0.50	110	72	136	0.7	20	
Chloroethane		4.76	ug/L	0.50	95	64	136	5.7	20	
Chloroform		4.52	ug/L	0.50	90	69	133	1.8	20	
Chloromethane		4.72	ug/L	0.50	94	63	149	12	20	
2-Chlorotoluene		4.96	ug/L	0.50	99	74	135	2.4	20	
4-Chlorotoluene		4.84	ug/L	0.50	97	79	135	2.5	20	
1,2-Dibromo-3-chloropropane		5.52	ug/L	1.0	110	63	125	0.7	20	
1,2-Dibromoethane		6.32	ug/L	0.50	126	75	131	1.9	20	
Dibromomethane		5.56	ug/L	0.50	111	72	133	0.7	20	
1,2-Dichlorobenzene		5.16	ug/L	0.50	103	78	129	2.4	20	
1,3-Dichlorobenzene		5.24	ug/L	0.50	105	79	132	2.3	20	
1,4-Dichlorobenzene		5.20	ug/L	0.50	104	78	131	2.3	20	
Dichlorodifluoromethane		5.92	ug/L	0.50	118	55	141	7.0	20	
1,1-Dichloroethane		4.92	ug/L	0.50	98	72	130	8.6	20	
1,2-Dichloroethane		4.64	ug/L	0.50	93	57	146	14	20	
1,1-Dichloroethene		4.92	ug/L	0.50	98	66	142	4.1	20	
cis-1,2-Dichloroethene		5.24	ug/L	0.50	105	74	133	5.2	20	
trans-1,2-Dichloroethene		5.76	ug/L	0.50	115	76	138	5.7	20	
1,2-Dichloropropane		4.88	ug/L	0.50	98	72	135	0.0	20	
1,3-Dichloropropane		4.84	ug/L	0.50	97	75	134	0.8	20	
2,2-Dichloropropane		4.68	ug/L	0.50	94	42	167	0.0	20	
1,1-Dichloropropene		4.80	ug/L	0.50	96	72	140	0.0	20	
cis-1,3-Dichloropropene		4.80	ug/L	0.50	96	75	132	0.8	20	
trans-1,3-Dichloropropene		5.12	ug/L	0.50	102	77	145	2.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R277755	
Lab ID: B17040178-001GMSD	75	Sample Matrix Spike Duplicate				Run: SUB-B277755			04/07/17 21:21	
Ethylbenzene		4.92	ug/L	0.50	98	78	131	0.8	20	
Hexachlorobutadiene		4.16	ug/L	0.50	83	65	141	5.2	20	
2-Hexanone		56.8	ug/L	10	114	72	131	5.1	20	
Iodomethane		2.04	ug/L	1.0	41	66	132	7.3	20	S
Isopropylbenzene		4.72	ug/L	0.50	94	72	135	1.7	20	
p-Isopropyltoluene		4.44	ug/L	0.50	89	71	134	2.7	20	
Methyl tert-butyl ether (MTBE)		4.72	ug/L	0.50	94	58	151	4.1	20	
Methyl ethyl ketone		70.0	ug/L	10	103	55	145	5.9	20	
Methyl isobutyl ketone		53.2	ug/L	10	106	73	129	2.3	20	
Methylene chloride		5.52	ug/L	0.50	110	73	126	1.5	20	
Naphthalene		6.56	ug/L	0.50	131	55	139	9.6	20	
n-Propylbenzene		4.64	ug/L	0.50	93	70	139	3.5	20	
Styrene		5.24	ug/L	0.50	105	76	134	2.3	20	
1,1,1,2-Tetrachloroethane		5.16	ug/L	0.50	103	75	135	0.8	20	
1,1,2,2-Tetrachloroethane		5.04	ug/L	0.50	101	72	132	0.0	20	
Tetrachloroethene		4.92	ug/L	0.50	98	78	137	2.4	20	
Toluene		5.04	ug/L	0.50	101	78	134	0.0	20	
1,2,3-Trichlorobenzene		6.00	ug/L	0.50	120	42	152	9.1	20	
1,2,4-Trichlorobenzene		5.52	ug/L	0.50	110	58	142	4.4	20	
1,1,1-Trichloroethane		4.80	ug/L	0.50	96	64	141	2.5	20	
1,1,2-Trichloroethane		4.96	ug/L	0.50	99	72	133	0.8	20	
Trichloroethene		4.68	ug/L	0.50	94	75	138	2.5	20	
Trichlorofluoromethane		4.76	ug/L	0.50	95	58	139	10	20	
1,2,3-Trichloropropane		5.32	ug/L	0.50	106	67	133	7.0	20	
1,2,4-Trimethylbenzene		4.84	ug/L	0.50	97	71	129	0.0	20	
1,3,5-Trimethylbenzene		4.76	ug/L	0.50	95	68	135	0.8	20	
Vinyl acetate		3.14	ug/L	1.0	63	31	124	6.3	20	
Vinyl chloride		5.20	ug/L	0.50	104	66	140	2.3	20	
m+p-Xylenes		10.2	ug/L	0.50	102	78	133	1.2	20	
o-Xylene		5.12	ug/L	0.50	102	79	136	1.6	20	
Xylenes, Total		15.3	ug/L	0.50	102	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	102	70	130			
Surr: Dibromofluoromethane				0.50	105	77	126			
Surr: p-Bromofluorobenzene				0.50	96	76	127			
Surr: Toluene-d8				0.50	101	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/13/17

Project: Carriage Trade Cleaners **Work Order:** H17030482

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R277792	
Lab ID: CCV041017		Continuing Calibration Verification Standard							04/10/17 09:43	
1,2,4-Trimethylbenzene		5.28	ug/L	0.50	106	70	130			
Method: SW8260B									Batch: B_R277792	
Lab ID: LCS041017		Laboratory Control Sample				Run: SUB-B277792			04/10/17 10:14	
1,2,4-Trimethylbenzene		5.44	ug/L	0.50	109	71	129			
Lab ID: BLK041017		Method Blank				Run: SUB-B277792			04/10/17 11:16	
1,2,4-Trimethylbenzene		ND	ug/L	0.50						
Lab ID: B1704486-002EMS		Sample Matrix Spike				Run: SUB-B277792			04/10/17 20:47	
1,2,4-Trimethylbenzene		5.24	ug/L	0.50	105	71	129			
Lab ID: B1704486-002EMSD		Sample Matrix Spike Duplicate				Run: SUB-B277792			04/10/17 21:19	
1,2,4-Trimethylbenzene		4.88	ug/L	0.50	98	71	129	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

CTA Construction and Environmental LLC H17030482

Login completed by: Tracy L. Lorash
Date Received: 3/29/2017
Reviewed by: BL2000\rtooke
Received by: TLL
Reviewed Date: 3/31/2017
Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	7.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Received sample set labeled Duplicate with no collection date or time that is not included on the COC. Per Ross Remsen, we are to analyze. Logged in with ID from vials and estimated collection date and time in the laboratory. Per client instruction, sample GHP-7s will be analzed for the 8260 short list. tl 3/30/17

ENERGY LAB
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Page _____ of _____

Account Information (Billing information)

Company/Name	CTA Construction + Environmental
Contact	Alan Frohberg
Phone	(406) 452-8321
Mailing Address	219 2nd Ave S.
City, State, Zip	Great Falls, MT 59405
Email	alanf@ctagroup.com
Receive Invoice	☐Hard Copy ☒Email
Receive Report	☐Hard Copy ☒Email
Purchase Order	GF13024.9
Quote	1384
Bottle Order	23493

Report Information (if different than Account Information)

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report	☐Hard Copy ☐Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

If not enough water focus on short list

Project Information

Project Name, PWSID, Permit, etc.	Carriage Trade Cleaners
Sampler Name	Ross
Sampler Phone	452-3321
Sample Origin State	MT
EPA/State Compliance	☒ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

Analysis Requested

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	SW8260B	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	HGF-4s	3-28-17	1022		W	X			H17030482
2	HGF-19s	↓	1102		↓	↓			
3	HGF-18s	↓	1318						
4	HGF-17s	3-29-17	0858						
5	HGF-9s	↓	0837						
6	GHB-7s	↓	0925						
7	GHB-54s	↓	0946						
8	GHB-46s	↓	1002		↓	↓			
9									
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Ross Reusen	3-29-17 / 1115		Tracy Lovat	3/29/17 16:36	Tracy Lovat
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
Courier	1	Y N C B	Y N	7.2 °C	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

April 26, 2017

CTA Construction and Environmental LLC
219 2nd Ave S
Great Falls, MT 59405-1804

Work Order: H17040246 Quote ID: H1384

Project Name: Carriage Trade Cleaners

Energy Laboratories Inc Helena MT received the following 9 samples for CTA Construction and Environmental LLC on 4/13/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H17040246-001	HDG-4s	04/11/17 10:26	04/13/17	Aqueous	8260-Volatile Organic Compounds-Extended List
H17040246-002	GHB-54s	04/11/17 11:30	04/13/17	Aqueous	Same As Above
H17040246-003	HGF-19s	04/11/17 13:16	04/13/17	Aqueous	Same As Above
H17040246-004	HGF-18s	04/11/17 14:34	04/13/17	Aqueous	Same As Above
H17040246-005	HGF-9s	04/11/17 15:03	04/13/17	Aqueous	Same As Above
H17040246-006	GHB-46s	04/12/17 13:25	04/13/17	Aqueous	Same As Above
H17040246-007	GHB-7s	04/12/17 13:43	04/13/17	Aqueous	Same As Above
H17040246-008	Duplicate	04/12/17 14:00	04/13/17	Aqueous	Same As Above
H17040246-009	TB 6306	04/11/17 10:26	04/13/17	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Work Order: H17040246

Report Date: 04/26/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-001
Client Sample ID: HDG-4s

Report Date: 04/26/17
Collection Date: 04/11/17 10:26
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/21/17 14:48 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/21/17 14:48 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/21/17 15:20 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/21/17 15:20 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/21/17 15:20 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-001
Client Sample ID: HDG-4s

Report Date: 04/26/17
Collection Date: 04/11/17 10:26
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/21/17 14:48 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/21/17 14:48 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/21/17 14:48 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/21/17 14:48 / eli-b
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	04/21/17 14:48 / eli-b
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	04/21/17 15:20 / eli-b
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	04/21/17 14:48 / eli-b
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	04/21/17 15:20 / eli-b
Surr: p-Bromofluorobenzene	118	%REC		76-127		SW8260B	04/21/17 14:48 / eli-b
Surr: p-Bromofluorobenzene	118	%REC		76-127		SW8260B	04/21/17 15:20 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/21/17 14:48 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/21/17 15:20 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-002
Client Sample ID: GHB-54s

Report Date: 04/26/17
Collection Date: 04/11/17 11:30
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/21/17 16:24 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/21/17 16:24 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/21/17 16:55 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/21/17 16:55 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/21/17 16:55 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-002
Client Sample ID: GHB-54s

Report Date: 04/26/17
Collection Date: 04/11/17 11:30
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/21/17 16:24 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/21/17 16:24 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/21/17 16:24 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Tetrachloroethene	8.2	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Trichloroethene	0.74	ug/L	J	1.0		SW8260B	04/21/17 16:24 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/21/17 16:24 / eli-b
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	04/21/17 16:24 / eli-b
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	04/21/17 16:55 / eli-b
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	04/21/17 16:24 / eli-b
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	04/21/17 16:55 / eli-b
Surr: p-Bromofluorobenzene	125	%REC		76-127		SW8260B	04/21/17 16:24 / eli-b
Surr: p-Bromofluorobenzene	120	%REC		76-127		SW8260B	04/21/17 16:55 / eli-b
Surr: Toluene-d8	103	%REC		79-122		SW8260B	04/21/17 16:24 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/21/17 16:55 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-003
Client Sample ID: HGF-19s

Report Date: 04/26/17
Collection Date: 04/11/17 13:16
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/21/17 17:27 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/21/17 17:27 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/21/17 17:59 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/21/17 17:59 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/21/17 17:59 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-003
Client Sample ID: HGF-19s

Report Date: 04/26/17
Collection Date: 04/11/17 13:16
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/21/17 17:27 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/21/17 17:27 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/21/17 17:27 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Tetrachloroethene	13	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Trichloroethene	1.2	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/21/17 17:27 / eli-b
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	04/21/17 17:27 / eli-b
Surr: 1,2-Dichloroethane-d4	105	%REC		70-130		SW8260B	04/21/17 17:59 / eli-b
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	04/21/17 17:27 / eli-b
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	04/21/17 17:59 / eli-b
Surr: p-Bromofluorobenzene	122	%REC		76-127		SW8260B	04/21/17 17:27 / eli-b
Surr: p-Bromofluorobenzene	120	%REC		76-127		SW8260B	04/21/17 17:59 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/21/17 17:27 / eli-b
Surr: Toluene-d8	101	%REC		79-122		SW8260B	04/21/17 17:59 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-004
Client Sample ID: HGF-18s

Report Date: 04/26/17
Collection Date: 04/11/17 14:34
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/21/17 23:49 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/21/17 23:49 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/22/17 00:21 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/22/17 00:21 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/17 00:21 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-004
Client Sample ID: HGF-18s

Report Date: 04/26/17
Collection Date: 04/11/17 14:34
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/21/17 23:49 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/21/17 23:49 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/21/17 23:49 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/21/17 23:49 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/21/17 23:49 / eli-b
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	04/22/17 00:21 / eli-b
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	04/21/17 23:49 / eli-b
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	04/22/17 00:21 / eli-b
Surr: p-Bromofluorobenzene	120	%REC		76-127		SW8260B	04/21/17 23:49 / eli-b
Surr: p-Bromofluorobenzene	119	%REC		76-127		SW8260B	04/22/17 00:21 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/21/17 23:49 / eli-b
Surr: Toluene-d8	101	%REC		79-122		SW8260B	04/22/17 00:21 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-005
Client Sample ID: HGF-9s

Report Date: 04/26/17
Collection Date: 04/11/17 15:03
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/22/17 03:33 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/22/17 03:33 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/22/17 04:06 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/22/17 04:06 / eli-b
Benzene	0.12	ug/L	J	1.0		SW8260B	04/22/17 03:33 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
sec-Butylbenzene	1.0	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/17 04:06 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2-Dichloroethane	50	ug/L		5.0		SW8260B	04/22/17 03:01 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2-Dichloropropane	0.42	ug/L	J	1.0		SW8260B	04/22/17 03:33 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-005
Client Sample ID: HGF-9s

Report Date: 04/26/17
Collection Date: 04/11/17 15:03
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/22/17 03:33 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Methyl tert-butyl ether (MTBE)	0.49	ug/L	J	1.0		SW8260B	04/22/17 03:33 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/22/17 03:33 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/22/17 03:33 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/22/17 03:33 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/22/17 03:33 / eli-b
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	04/22/17 04:06 / eli-b
Surr: Dibromofluoromethane	108	%REC		77-126		SW8260B	04/22/17 03:33 / eli-b
Surr: Dibromofluoromethane	108	%REC		77-126		SW8260B	04/22/17 04:06 / eli-b
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	04/22/17 03:33 / eli-b
Surr: p-Bromofluorobenzene	111	%REC		76-127		SW8260B	04/22/17 04:06 / eli-b
Surr: Toluene-d8	98.0	%REC		79-122		SW8260B	04/22/17 03:33 / eli-b
Surr: Toluene-d8	92.0	%REC		79-122		SW8260B	04/22/17 04:06 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-006
Client Sample ID: GHB-46s

Report Date: 04/26/17
Collection Date: 04/12/17 13:25
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/22/17 05:10 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/22/17 05:10 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/22/17 05:42 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/22/17 05:42 / eli-b
Benzene	1.0	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
n-Butylbenzene	88	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
sec-Butylbenzene	29	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/17 05:42 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
cis-1,2-Dichloroethene	6.6	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
trans-1,2-Dichloroethene	1.1	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Ethylbenzene	552	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-006
Client Sample ID: GHB-46s

Report Date: 04/26/17
Collection Date: 04/12/17 13:25
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/22/17 05:10 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Isopropylbenzene	70	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
p-Isopropyltoluene	13	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/22/17 05:10 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/22/17 05:10 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Naphthalene	7.2	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
n-Propylbenzene	286	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Tetrachloroethene	3.9	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Toluene	0.69	ug/L	J	1.0		SW8260B	04/22/17 05:10 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Trichloroethene	2.5	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
1,2,4-Trimethylbenzene	1370	ug/L		100		SW8260B	04/24/17 12:48 / eli-b
1,3,5-Trimethylbenzene	566	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/22/17 05:10 / eli-b
m+p-Xylenes	384	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
o-Xylene	73	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
Xylenes, Total	457	ug/L		25		SW8260B	04/22/17 04:38 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/22/17 05:10 / eli-b
Surr: 1,2-Dichloroethane-d4	88.0	%REC		70-130		SW8260B	04/22/17 05:42 / eli-b
Surr: Dibromofluoromethane	116	%REC		77-126		SW8260B	04/22/17 05:10 / eli-b
Surr: Dibromofluoromethane	117	%REC		77-126		SW8260B	04/22/17 05:42 / eli-b
Surr: p-Bromofluorobenzene	124	%REC		76-127		SW8260B	04/22/17 05:10 / eli-b
Surr: p-Bromofluorobenzene	131	%REC	S	76-127		SW8260B	04/22/17 05:42 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/22/17 05:10 / eli-b
Surr: Toluene-d8	90.0	%REC		79-122		SW8260B	04/22/17 05:42 / eli-b

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-007
Client Sample ID: GHB-7s

Report Date: 04/26/17
Collection Date: 04/12/17 13:43
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/24/17 12:17 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/24/17 12:17 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/22/17 01:26 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/24/17 12:17 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/22/17 01:26 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/24/17 12:17 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/17 01:26 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
cis-1,2-Dichloroethene	4.2	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
trans-1,2-Dichloroethene	2.1	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-007
Client Sample ID: GHB-7s

Report Date: 04/26/17
Collection Date: 04/12/17 13:43
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
2-Hexanone	ND	ug/L		20		SW8260B	04/24/17 12:17 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/24/17 12:17 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/24/17 12:17 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Tetrachloroethene	2.2	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Trichloroethene	1.3	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/24/17 12:17 / eli-b
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	04/22/17 01:26 / eli-b
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	04/24/17 12:17 / eli-b
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	04/22/17 01:26 / eli-b
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	04/24/17 12:17 / eli-b
Surr: p-Bromofluorobenzene	120	%REC		76-127		SW8260B	04/22/17 01:26 / eli-b
Surr: p-Bromofluorobenzene	125	%REC		76-127		SW8260B	04/24/17 12:17 / eli-b
Surr: Toluene-d8	100	%REC		79-122		SW8260B	04/22/17 01:26 / eli-b
Surr: Toluene-d8	104	%REC		79-122		SW8260B	04/24/17 12:17 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-008
Client Sample ID: Duplicate

Report Date: 04/26/17
Collection Date: 04/12/17 14:00
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/22/17 01:58 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/22/17 01:58 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/22/17 02:30 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/22/17 02:30 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/17 02:30 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-008
Client Sample ID: Duplicate

Report Date: 04/26/17
Collection Date: 04/12/17 14:00
DateReceived: 04/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/22/17 01:58 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/22/17 01:58 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/22/17 01:58 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/22/17 01:58 / eli-b
Surr: 1,2-Dichloroethane-d4	123	%REC		70-130		SW8260B	04/22/17 01:58 / eli-b
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	04/22/17 02:30 / eli-b
Surr: Dibromofluoromethane	108	%REC		77-126		SW8260B	04/22/17 01:58 / eli-b
Surr: Dibromofluoromethane	105	%REC		77-126		SW8260B	04/22/17 02:30 / eli-b
Surr: p-Bromofluorobenzene	124	%REC		76-127		SW8260B	04/22/17 01:58 / eli-b
Surr: p-Bromofluorobenzene	119	%REC		76-127		SW8260B	04/22/17 02:30 / eli-b
Surr: Toluene-d8	96.0	%REC		79-122		SW8260B	04/22/17 01:58 / eli-b
Surr: Toluene-d8	100	%REC		79-122		SW8260B	04/22/17 02:30 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-009
Client Sample ID: TB 6306

Report Date: 04/26/17
Collection Date: 04/11/17 10:26
DateReceived: 04/13/17
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetonitrile	ND	ug/L		10		SW8260B	04/21/17 15:52 / eli-b
Acetone	ND	ug/L		20		SW8260B	04/21/17 15:52 / eli-b
Acrolein	ND	ug/L		20		SW8260B	04/21/17 15:52 / eli-b
Acrylonitrile	ND	ug/L		20		SW8260B	04/21/17 15:52 / eli-b
Benzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Bromobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Bromoform	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Bromomethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
n-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
sec-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
tert-Butylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Carbon disulfide	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Chloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Chloroform	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Chloromethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Dibromomethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Hexachlorobutadiene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC
Project: Carriage Trade Cleaners
Lab ID: H17040246-009
Client Sample ID: TB 6306

Report Date: 04/26/17
Collection Date: 04/11/17 10:26
DateReceived: 04/13/17
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
2-Hexanone	ND	ug/L		20		SW8260B	04/21/17 15:52 / eli-b
Iodomethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Isopropylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
p-Isopropyltoluene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/21/17 15:52 / eli-b
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	04/21/17 15:52 / eli-b
Methylene chloride	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Naphthalene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
n-Propylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Styrene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Toluene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2,3-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Trichloroethene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,2,4-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
1,3,5-Trimethylbenzene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Vinyl acetate	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
o-Xylene	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/21/17 15:52 / eli-b
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	04/21/17 15:52 / eli-b
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	04/21/17 15:52 / eli-b
Surr: p-Bromofluorobenzene	118	%REC		76-127		SW8260B	04/21/17 15:52 / eli-b
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/21/17 15:52 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: LCS042117	76	Laboratory Control Sample				Run: SUB-B278499			04/21/17 09:52	
Acetonitrile		54.8	ug/L	20	110	54	142			
Acetone		48.0	ug/L	10	96	62	130			
Acrolein		43.2	ug/L	20	86	22	203			
Acrylonitrile		39.7	ug/L	10	79	60	130			
Benzene		4.96	ug/L	0.50	99	71	133			
Bromobenzene		5.48	ug/L	0.50	110	78	133			
Bromochloromethane		5.12	ug/L	0.50	102	68	131			
Bromodichloromethane		5.20	ug/L	0.50	104	67	138			
Bromoform		5.04	ug/L	0.50	101	64	136			
Bromomethane		2.56	ug/L	0.50	51	60	138			S
n-Butylbenzene		4.48	ug/L	0.50	90	72	135			
sec-Butylbenzene		5.20	ug/L	0.50	104	73	135			
tert-Butylbenzene		5.36	ug/L	0.50	107	69	137			
Carbon disulfide		4.84	ug/L	0.50	93	46	145			
Carbon tetrachloride		5.08	ug/L	0.50	102	61	144			
Chlorobenzene		4.88	ug/L	0.50	98	78	136			
Chlorodibromomethane		5.00	ug/L	0.50	100	72	136			
Chloroethane		5.32	ug/L	0.50	106	64	136			
2-Chloroethyl vinyl ether		4.40	ug/L	0.50	88	64	132			
Chloroform		4.76	ug/L	0.50	95	69	133			
Chloromethane		4.40	ug/L	0.50	88	63	149			
2-Chlorotoluene		5.60	ug/L	0.50	112	74	135			
4-Chlorotoluene		5.28	ug/L	0.50	106	79	135			
1,2-Dibromo-3-chloropropane		5.08	ug/L	1.0	102	63	125			
1,2-Dibromoethane		4.20	ug/L	0.50	84	75	131			
Dibromomethane		4.80	ug/L	0.50	96	72	133			
1,2-Dichlorobenzene		5.36	ug/L	0.50	107	78	129			
1,3-Dichlorobenzene		5.24	ug/L	0.50	105	79	132			
1,4-Dichlorobenzene		5.00	ug/L	0.50	100	78	131			
Dichlorodifluoromethane		5.76	ug/L	0.50	115	55	141			
1,1-Dichloroethane		5.24	ug/L	0.50	105	72	130			
1,2-Dichloroethane		5.04	ug/L	0.50	101	57	146			
1,1-Dichloroethene		5.00	ug/L	0.50	100	66	142			
cis-1,2-Dichloroethene		5.12	ug/L	0.50	102	74	133			
trans-1,2-Dichloroethene		4.76	ug/L	0.50	95	76	138			
1,2-Dichloropropane		4.88	ug/L	0.50	98	72	135			
1,3-Dichloropropane		4.60	ug/L	0.50	92	75	134			
2,2-Dichloropropane		4.96	ug/L	0.50	99	42	167			
1,1-Dichloropropene		4.60	ug/L	0.50	92	72	140			
cis-1,3-Dichloropropene		4.12	ug/L	0.50	82	75	132			
trans-1,3-Dichloropropene		4.16	ug/L	0.50	83	77	145			
Ethylbenzene		4.88	ug/L	0.50	98	78	131			
Hexachlorobutadiene		4.52	ug/L	0.50	90	65	141			
2-Hexanone		48.0	ug/L	10	96	72	131			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: LCS042117	76	Laboratory Control Sample				Run: SUB-B278499			04/21/17 09:52	
Iodomethane		3.73	ug/L	1.0	75	66	132			
Isopropylbenzene		5.48	ug/L	0.50	110	72	135			
p-Isopropyltoluene		5.00	ug/L	0.50	100	71	134			
Methyl tert-butyl ether (MTBE)		4.24	ug/L	0.50	85	58	151			
Methyl ethyl ketone		44.8	ug/L	10	90	55	145			
Methyl isobutyl ketone		45.2	ug/L	10	90	73	129			
Methylene chloride		5.20	ug/L	0.50	104	73	126			
Naphthalene		4.52	ug/L	0.50	90	55	139			
n-Propylbenzene		5.32	ug/L	0.50	106	70	139			
Styrene		4.84	ug/L	0.50	97	76	134			
1,1,1,2-Tetrachloroethane		4.68	ug/L	0.50	94	75	135			
1,1,2,2-Tetrachloroethane		5.32	ug/L	0.50	106	72	132			
Tetrachloroethene		5.00	ug/L	0.50	100	78	137			
Toluene		4.92	ug/L	0.50	98	78	134			
1,2,3-Trichlorobenzene		4.16	ug/L	0.50	83	42	152			
1,2,4-Trichlorobenzene		4.04	ug/L	0.50	81	58	142			
1,1,1-Trichloroethane		4.88	ug/L	0.50	98	64	141			
1,1,2-Trichloroethane		4.72	ug/L	0.50	94	72	133			
Trichloroethene		4.64	ug/L	0.50	93	75	138			
Trichlorofluoromethane		5.20	ug/L	0.50	104	58	139			
1,2,3-Trichloropropane		5.20	ug/L	0.50	104	67	133			
1,2,4-Trimethylbenzene		5.28	ug/L	0.50	106	71	129			
1,3,5-Trimethylbenzene		5.44	ug/L	0.50	109	68	135			
Vinyl acetate		4.32	ug/L	1.0	86	31	124			
Vinyl chloride		5.32	ug/L	0.50	106	66	140			
m+p-Xylenes		9.64	ug/L	0.50	96	78	133			
o-Xylene		4.88	ug/L	0.50	98	79	136			
Xylenes, Total		14.5	ug/L	0.50	97	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	99	70	130			
Surr: Dibromofluoromethane				0.50	100	77	126			
Surr: p-Bromofluorobenzene				0.50	110	76	127			
Surr: Toluene-d8				0.50	101	79	122			
Lab ID: BLK042117	76	Method Blank				Run: SUB-B278499			04/21/17 10:56	
Acetonitrile		ND	ug/L	20						
Acetone		ND	ug/L	10						
Acrolein		ND	ug/L	20						
Acrylonitrile		ND	ug/L	10						
Benzene		ND	ug/L	0.50						
Bromobenzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R278499
Lab ID: BLK042117	76	Method Blank				Run: SUB-B278499				04/21/17 10:56
n-Butylbenzene		ND	ug/L	0.50						
sec-Butylbenzene		ND	ug/L	0.50						
tert-Butylbenzene		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
2-Chloroethyl vinyl ether		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
2-Chlorotoluene		ND	ug/L	0.50						
4-Chlorotoluene		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,3-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
1,3-Dichloropropane		ND	ug/L	0.50						
2,2-Dichloropropane		ND	ug/L	0.50						
1,1-Dichloropropene		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
Hexachlorobutadiene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						
Isopropylbenzene		ND	ug/L	0.50						
p-Isopropyltoluene		ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Naphthalene		ND	ug/L	0.50						
n-Propylbenzene		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: BLK042117	76	Method Blank				Run: SUB-B278499			04/21/17 10:56	
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,2,3-Trichlorobenzene		ND	ug/L	0.50						
1,2,4-Trichlorobenzene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
1,2,4-Trimethylbenzene		ND	ug/L	0.50						
1,3,5-Trimethylbenzene		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	104	70	130			
Surr: Dibromofluoromethane				0.50	104	77	126			
Surr: p-Bromofluorobenzene				0.50	122	76	127			
Surr: Toluene-d8				0.50	102	79	122			
Lab ID: H17040246-001A	73	Sample Matrix Spike				Run: SUB-B278499			04/21/17 18:31	
Acetonitrile		57.6	ug/L	20	115	54	142			
Acetone		52.8	ug/L	10	106	62	130			
Benzene		5.16	ug/L	0.50	103	71	133			
Bromobenzene		5.52	ug/L	0.50	110	78	133			
Bromochloromethane		5.12	ug/L	0.50	102	68	131			
Bromodichloromethane		5.44	ug/L	0.50	109	67	138			
Bromoform		5.44	ug/L	0.50	109	64	136			
Bromomethane		3.34	ug/L	0.50	67	60	138			
n-Butylbenzene		4.72	ug/L	0.50	94	72	135			
sec-Butylbenzene		5.36	ug/L	0.50	107	73	135			
tert-Butylbenzene		5.48	ug/L	0.50	110	69	137			
Carbon disulfide		4.56	ug/L	0.50	91	46	145			
Carbon tetrachloride		5.32	ug/L	0.50	106	61	144			
Chlorobenzene		5.04	ug/L	0.50	101	78	136			
Chlorodibromomethane		5.32	ug/L	0.50	106	72	136			
Chloroethane		5.16	ug/L	0.50	103	64	136			
Chloroform		4.92	ug/L	0.50	98	69	133			
Chloromethane		4.04	ug/L	0.50	81	63	149			
2-Chlorotoluene		5.68	ug/L	0.50	114	74	135			
4-Chlorotoluene		5.40	ug/L	0.50	108	79	135			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: H17040246-001A	73	Sample Matrix Spike				Run: SUB-B278499			04/21/17 18:31	
1,2-Dibromo-3-chloropropane		5.36	ug/L	1.0	107	63	125			
1,2-Dibromoethane		4.64	ug/L	0.50	93	75	131			
Dibromomethane		5.04	ug/L	0.50	101	72	133			
1,2-Dichlorobenzene		5.44	ug/L	0.50	109	78	129			
1,3-Dichlorobenzene		5.28	ug/L	0.50	106	79	132			
1,4-Dichlorobenzene		5.16	ug/L	0.50	103	78	131			
Dichlorodifluoromethane		5.36	ug/L	0.50	107	55	141			
1,1-Dichloroethane		5.36	ug/L	0.50	107	72	130			
1,2-Dichloroethane		5.20	ug/L	0.50	104	57	146			
1,1-Dichloroethene		5.04	ug/L	0.50	101	66	142			
cis-1,2-Dichloroethene		5.28	ug/L	0.50	106	74	133			
trans-1,2-Dichloroethene		4.60	ug/L	0.50	92	76	138			
1,2-Dichloropropane		5.08	ug/L	0.50	102	72	135			
1,3-Dichloropropane		4.76	ug/L	0.50	95	75	134			
2,2-Dichloropropane		4.80	ug/L	0.50	96	42	167			
1,1-Dichloropropene		4.76	ug/L	0.50	95	72	140			
cis-1,3-Dichloropropene		4.28	ug/L	0.50	86	75	132			
trans-1,3-Dichloropropene		4.44	ug/L	0.50	89	77	145			
Ethylbenzene		4.92	ug/L	0.50	98	78	131			
Hexachlorobutadiene		4.76	ug/L	0.50	95	65	141			
2-Hexanone		46.4	ug/L	10	93	72	131			
Iodomethane		2.84	ug/L	1.0	57	66	132			S
Isopropylbenzene		5.64	ug/L	0.50	113	72	135			
p-Isopropyltoluene		5.20	ug/L	0.50	104	71	134			
Methyl tert-butyl ether (MTBE)		5.08	ug/L	0.50	102	58	151			
Methyl ethyl ketone		49.6	ug/L	10	99	55	145			
Methyl isobutyl ketone		45.2	ug/L	10	90	73	129			
Methylene chloride		5.44	ug/L	0.50	109	73	126			
Naphthalene		4.40	ug/L	0.50	88	55	139			
n-Propylbenzene		5.40	ug/L	0.50	108	70	139			
Styrene		4.96	ug/L	0.50	99	76	134			
1,1,1,2-Tetrachloroethane		4.88	ug/L	0.50	98	75	135			
1,1,2,2-Tetrachloroethane		5.40	ug/L	0.50	108	72	132			
Tetrachloroethene		5.12	ug/L	0.50	102	78	137			
Toluene		4.96	ug/L	0.50	99	78	134			
1,2,3-Trichlorobenzene		4.44	ug/L	0.50	89	42	152			
1,2,4-Trichlorobenzene		4.16	ug/L	0.50	83	58	142			
1,1,1-Trichloroethane		5.24	ug/L	0.50	105	64	141			
1,1,2-Trichloroethane		4.92	ug/L	0.50	98	72	133			
Trichloroethene		4.76	ug/L	0.50	95	75	138			
Trichlorofluoromethane		4.92	ug/L	0.50	98	58	139			
1,2,3-Trichloropropane		5.40	ug/L	0.50	108	67	133			
1,2,4-Trimethylbenzene		5.32	ug/L	0.50	106	71	129			
1,3,5-Trimethylbenzene		5.56	ug/L	0.50	111	68	135			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: H17040246-001A	73	Sample Matrix Spike				Run: SUB-B278499			04/21/17 18:31	
Vinyl acetate		3.61	ug/L	1.0	72	31	124			
Vinyl chloride		5.60	ug/L	0.50	112	66	140			
m+p-Xylenes		10.0	ug/L	0.50	100	78	133			
o-Xylene		5.04	ug/L	0.50	101	79	136			
Xylenes, Total		15.0	ug/L	0.50	100	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	105	70	130			
Surr: Dibromofluoromethane				0.50	107	77	126			
Surr: p-Bromofluorobenzene				0.50	107	76	127			
Surr: Toluene-d8				0.50	100	79	122			
Lab ID: H17040246-001A	73	Sample Matrix Spike Duplicate				Run: SUB-B278499			04/21/17 19:03	
Acetonitrile		50.0	ug/L	20	100	54	142	14	20	
Acetone		50.0	ug/L	10	100	62	130	5.4	20	
Benzene		5.12	ug/L	0.50	102	71	133	0.8	20	
Bromobenzene		5.60	ug/L	0.50	112	78	133	1.4	20	
Bromochloromethane		4.80	ug/L	0.50	96	68	131	6.5	20	
Bromodichloromethane		5.48	ug/L	0.50	110	67	138	0.7	20	
Bromoform		5.48	ug/L	0.50	110	64	136	0.7	20	
Bromomethane		3.62	ug/L	0.50	72	60	138	8.0	20	
n-Butylbenzene		4.76	ug/L	0.50	95	72	135	0.8	20	
sec-Butylbenzene		5.52	ug/L	0.50	110	73	135	2.9	20	
tert-Butylbenzene		5.52	ug/L	0.50	110	69	137	0.7	20	
Carbon disulfide		4.40	ug/L	0.50	88	46	145	3.6	20	
Carbon tetrachloride		5.36	ug/L	0.50	107	61	144	0.7	20	
Chlorobenzene		5.12	ug/L	0.50	102	78	136	1.6	20	
Chlorodibromomethane		5.40	ug/L	0.50	108	72	136	1.5	20	
Chloroethane		5.04	ug/L	0.50	101	64	136	2.4	20	
Chloroform		4.88	ug/L	0.50	98	69	133	0.8	20	
Chloromethane		4.32	ug/L	0.50	86	63	149	6.7	20	
2-Chlorotoluene		5.76	ug/L	0.50	115	74	135	1.4	20	
4-Chlorotoluene		5.44	ug/L	0.50	109	79	135	0.7	20	
1,2-Dibromo-3-chloropropane		5.08	ug/L	1.0	102	63	125	5.4	20	
1,2-Dibromoethane		4.56	ug/L	0.50	91	75	131	1.7	20	
Dibromomethane		5.16	ug/L	0.50	103	72	133	2.4	20	
1,2-Dichlorobenzene		5.60	ug/L	0.50	112	78	129	2.9	20	
1,3-Dichlorobenzene		5.40	ug/L	0.50	108	79	132	2.2	20	
1,4-Dichlorobenzene		5.24	ug/L	0.50	105	78	131	1.5	20	
Dichlorodifluoromethane		5.44	ug/L	0.50	109	55	141	1.5	20	
1,1-Dichloroethane		5.24	ug/L	0.50	105	72	130	2.3	20	
1,2-Dichloroethane		5.40	ug/L	0.50	108	57	146	3.8	20	
1,1-Dichloroethene		5.40	ug/L	0.50	108	66	142	6.9	20	
cis-1,2-Dichloroethene		5.20	ug/L	0.50	104	74	133	1.5	20	
trans-1,2-Dichloroethene		4.96	ug/L	0.50	99	76	138	7.5	20	
1,2-Dichloropropane		5.12	ug/L	0.50	102	72	135	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: H17040246-001A	73	Sample Matrix Spike Duplicate				Run: SUB-B278499			04/21/17 19:03	
1,3-Dichloropropane		4.80	ug/L	0.50	96	75	134	0.8	20	
2,2-Dichloropropane		4.80	ug/L	0.50	96	42	167	0.0	20	
1,1-Dichloropropene		4.80	ug/L	0.50	96	72	140	0.8	20	
cis-1,3-Dichloropropene		4.36	ug/L	0.50	87	75	132	1.9	20	
trans-1,3-Dichloropropene		4.44	ug/L	0.50	89	77	145	0.0	20	
Ethylbenzene		5.08	ug/L	0.50	102	78	131	3.2	20	
Hexachlorobutadiene		4.84	ug/L	0.50	97	65	141	1.7	20	
2-Hexanone		47.6	ug/L	10	95	72	131	2.6	20	
Iodomethane		2.90	ug/L	1.0	58	66	132	2.1	20	S
Isopropylbenzene		5.68	ug/L	0.50	114	72	135	0.7	20	
p-Isopropyltoluene		5.32	ug/L	0.50	106	71	134	2.3	20	
Methyl tert-butyl ether (MTBE)		4.24	ug/L	0.50	85	58	151	18	20	
Methyl ethyl ketone		47.6	ug/L	10	95	55	145	4.1	20	
Methyl isobutyl ketone		45.2	ug/L	10	90	73	129	0.0	20	
Methylene chloride		5.48	ug/L	0.50	110	73	126	0.7	20	
Naphthalene		4.64	ug/L	0.50	93	55	139	5.3	20	
n-Propylbenzene		5.52	ug/L	0.50	110	70	139	2.2	20	
Styrene		5.04	ug/L	0.50	101	76	134	1.6	20	
1,1,1,2-Tetrachloroethane		4.96	ug/L	0.50	99	75	135	1.6	20	
1,1,2,2-Tetrachloroethane		5.36	ug/L	0.50	107	72	132	0.7	20	
Tetrachloroethene		5.20	ug/L	0.50	104	78	137	1.6	20	
Toluene		5.08	ug/L	0.50	102	78	134	2.4	20	
1,2,3-Trichlorobenzene		4.60	ug/L	0.50	92	42	152	3.5	20	
1,2,4-Trichlorobenzene		4.40	ug/L	0.50	88	58	142	5.6	20	
1,1,1-Trichloroethane		5.28	ug/L	0.50	106	64	141	0.8	20	
1,1,2-Trichloroethane		4.96	ug/L	0.50	99	72	133	0.8	20	
Trichloroethene		4.88	ug/L	0.50	98	75	138	2.5	20	
Trichlorofluoromethane		4.88	ug/L	0.50	98	58	139	0.8	20	
1,2,3-Trichloropropane		5.32	ug/L	0.50	106	67	133	1.5	20	
1,2,4-Trimethylbenzene		5.44	ug/L	0.50	109	71	129	2.2	20	
1,3,5-Trimethylbenzene		5.60	ug/L	0.50	112	68	135	0.7	20	
Vinyl acetate		3.37	ug/L	1.0	67	31	124	6.8	20	
Vinyl chloride		5.36	ug/L	0.50	107	66	140	4.4	20	
m+p-Xylenes		10.2	ug/L	0.50	102	78	133	1.6	20	
o-Xylene		5.04	ug/L	0.50	101	79	136	0.0	20	
Xylenes, Total		15.2	ug/L	0.50	101	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	106	70	130			
Surr: Dibromofluoromethane				0.50	105	77	126			
Surr: p-Bromofluorobenzene				0.50	108	76	127			
Surr: Toluene-d8				0.50	101	79	122			
Lab ID: H17040246-001A	7	Sample Matrix Spike				Run: SUB-B278499			04/21/17 19:34	
Acrolein		39.1	ug/L	20	78	22	203			
Acrylonitrile		35.8	ug/L	10	72	60	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R278499
Lab ID: H17040246-001A	7	Sample Matrix Spike				Run: SUB-B278499			04/21/17 19:34	
2-Chloroethyl vinyl ether		ND	ug/L	0.50	0	64	132			S 1
Surr: 1,2-Dichloroethane-d4				0.50	105	70	130			
Surr: Dibromofluoromethane				0.50	104	77	126			
Surr: p-Bromofluorobenzene				0.50	117	76	127			
Surr: Toluene-d8				0.50	102	79	122			
- 1 = This is a known very reactive compound. The recovery of this compound was normal in the Laboratory Control Sample (LCS). The compound appears to have reacted with the sample matrix.										
Lab ID: H17040246-001A	7	Sample Matrix Spike Duplicate				Run: SUB-B278499			04/21/17 20:06	
Acrolein		39.8	ug/L	20	80	22	203	1.8	20	
Acrylonitrile		34.6	ug/L	10	69	60	130	3.4	20	
2-Chloroethyl vinyl ether		ND	ug/L	0.50	0	64	132		20	S 1
Surr: 1,2-Dichloroethane-d4				0.50	92	70	130			
Surr: Dibromofluoromethane				0.50	104	77	126			
Surr: p-Bromofluorobenzene				0.50	119	76	127			
Surr: Toluene-d8				0.50	102	79	122			
- 1 = This is a known very reactive compound. The recovery of this compound was normal in the Laboratory Control Sample (LCS). The compound appears to have reacted with the sample matrix.										
Lab ID: LCSA042117	76	Laboratory Control Sample				Run: SUB-B278499			04/21/17 22:13	
Acetonitrile		53.6	ug/L	20	107	54	142			
Acetone		46.8	ug/L	10	94	62	130			
Acrolein		41.6	ug/L	20	83	22	203			
Acrylonitrile		38.8	ug/L	10	78	60	130			
Benzene		5.20	ug/L	0.50	104	71	133			
Bromobenzene		5.68	ug/L	0.50	114	78	133			
Bromochloromethane		5.24	ug/L	0.50	105	68	131			
Bromodichloromethane		5.44	ug/L	0.50	109	67	138			
Bromoform		5.32	ug/L	0.50	106	64	136			
Bromomethane		3.60	ug/L	0.50	72	60	138			
n-Butylbenzene		5.12	ug/L	0.50	102	72	135			
sec-Butylbenzene		5.76	ug/L	0.50	115	73	135			
tert-Butylbenzene		5.84	ug/L	0.50	117	69	137			
Carbon disulfide		4.32	ug/L	0.50	86	46	145			
Carbon tetrachloride		5.40	ug/L	0.50	108	61	144			
Chlorobenzene		5.16	ug/L	0.50	103	78	136			
Chlorodibromomethane		5.28	ug/L	0.50	106	72	136			
Chloroethane		4.56	ug/L	0.50	91	64	136			
2-Chloroethyl vinyl ether		4.64	ug/L	0.50	93	64	132			
Chloroform		4.96	ug/L	0.50	99	69	133			
Chloromethane		3.54	ug/L	0.50	71	63	149			
2-Chlorotoluene		5.96	ug/L	0.50	119	74	135			
4-Chlorotoluene		5.64	ug/L	0.50	113	79	135			
1,2-Dibromo-3-chloropropane		5.36	ug/L	1.0	107	63	125			
1,2-Dibromoethane		4.40	ug/L	0.50	88	75	131			
Dibromomethane		4.96	ug/L	0.50	99	72	133			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: LCSA042117	76	Laboratory Control Sample				Run: SUB-B278499			04/21/17 22:13	
1,2-Dichlorobenzene		5.64	ug/L	0.50	113	78	129			
1,3-Dichlorobenzene		5.56	ug/L	0.50	111	79	132			
1,4-Dichlorobenzene		5.28	ug/L	0.50	106	78	131			
Dichlorodifluoromethane		5.08	ug/L	0.50	102	55	141			
1,1-Dichloroethane		5.16	ug/L	0.50	103	72	130			
1,2-Dichloroethane		5.28	ug/L	0.50	106	57	146			
1,1-Dichloroethene		5.24	ug/L	0.50	105	66	142			
cis-1,2-Dichloroethene		5.36	ug/L	0.50	107	74	133			
trans-1,2-Dichloroethene		4.76	ug/L	0.50	95	76	138			
1,2-Dichloropropane		5.04	ug/L	0.50	101	72	135			
1,3-Dichloropropane		4.68	ug/L	0.50	94	75	134			
2,2-Dichloropropane		4.24	ug/L	0.50	85	42	167			
1,1-Dichloropropene		4.88	ug/L	0.50	98	72	140			
cis-1,3-Dichloropropene		4.16	ug/L	0.50	83	75	132			
trans-1,3-Dichloropropene		4.28	ug/L	0.50	86	77	145			
Ethylbenzene		5.12	ug/L	0.50	102	78	131			
Hexachlorobutadiene		5.28	ug/L	0.50	106	65	141			
2-Hexanone		44.4	ug/L	10	89	72	131			
Iodomethane		3.10	ug/L	1.0	62	66	132			S
Isopropylbenzene		5.96	ug/L	0.50	119	72	135			
p-Isopropyltoluene		5.56	ug/L	0.50	111	71	134			
Methyl tert-butyl ether (MTBE)		4.28	ug/L	0.50	86	58	151			
Methyl ethyl ketone		44.4	ug/L	10	89	55	145			
Methyl isobutyl ketone		41.6	ug/L	10	83	73	129			
Methylene chloride		5.32	ug/L	0.50	106	73	126			
Naphthalene		4.68	ug/L	0.50	94	55	139			
n-Propylbenzene		5.68	ug/L	0.50	114	70	139			
Styrene		5.00	ug/L	0.50	100	76	134			
1,1,1,2-Tetrachloroethane		4.96	ug/L	0.50	99	75	135			
1,1,2,2-Tetrachloroethane		5.40	ug/L	0.50	108	72	132			
Tetrachloroethene		5.16	ug/L	0.50	103	78	137			
Toluene		5.12	ug/L	0.50	102	78	134			
1,2,3-Trichlorobenzene		4.68	ug/L	0.50	94	42	152			
1,2,4-Trichlorobenzene		4.56	ug/L	0.50	91	58	142			
1,1,1-Trichloroethane		5.40	ug/L	0.50	108	64	141			
1,1,2-Trichloroethane		4.80	ug/L	0.50	96	72	133			
Trichloroethene		4.92	ug/L	0.50	98	75	138			
Trichlorofluoromethane		4.52	ug/L	0.50	90	58	139			
1,2,3-Trichloropropane		5.40	ug/L	0.50	108	67	133			
1,2,4-Trimethylbenzene		5.68	ug/L	0.50	114	71	129			
1,3,5-Trimethylbenzene		5.92	ug/L	0.50	118	68	135			
Vinyl acetate		3.36	ug/L	1.0	67	31	124			
Vinyl chloride		5.00	ug/L	0.50	100	66	140			
m+p-Xylenes		10.2	ug/L	0.50	102	78	133			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: LCSA042117	76	Laboratory Control Sample				Run: SUB-B278499			04/21/17 22:13	
o-Xylene		5.12	ug/L	0.50	102	79	136			
Xylenes, Total		15.4	ug/L	0.50	102	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	101	70	130			
Surr: Dibromofluoromethane				0.50	106	77	126			
Surr: p-Bromofluorobenzene				0.50	108	76	127			
Surr: Toluene-d8				0.50	101	79	122			
Lab ID: BLKA042117	76	Method Blank				Run: SUB-B278499			04/21/17 23:17	
Acetonitrile		ND	ug/L	20						
Acetone		ND	ug/L	10						
Acrolein		ND	ug/L	20						
Acrylonitrile		ND	ug/L	10						
Benzene		ND	ug/L	0.50						
Bromobenzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
n-Butylbenzene		ND	ug/L	0.50						
sec-Butylbenzene		ND	ug/L	0.50						
tert-Butylbenzene		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
2-Chloroethyl vinyl ether		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
2-Chlorotoluene		ND	ug/L	0.50						
4-Chlorotoluene		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,3-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278499	
Lab ID: BLKA042117	76	Method Blank				Run: SUB-B278499			04/21/17 23:17	
1,3-Dichloropropane		ND	ug/L	0.50						
2,2-Dichloropropane		ND	ug/L	0.50						
1,1-Dichloropropene		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
Hexachlorobutadiene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						
Isopropylbenzene		ND	ug/L	0.50						
p-Isopropyltoluene		ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Naphthalene		ND	ug/L	0.50						
n-Propylbenzene		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,2,3-Trichlorobenzene		ND	ug/L	0.50						
1,2,4-Trichlorobenzene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
1,2,4-Trimethylbenzene		ND	ug/L	0.50						
1,3,5-Trimethylbenzene		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	104	70	130			
Surr: Dibromofluoromethane				0.50	104	77	126			
Surr: p-Bromofluorobenzene				0.50	118	76	127			
Surr: Toluene-d8				0.50	102	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278582	
Lab ID: LCS042417	76	Laboratory Control Sample				Run: SUB-B278582			04/24/17 10:40	
Acetonitrile		62.4	ug/L	20	125	54	142			
Acetone		54.0	ug/L	10	108	62	130			
Acrolein		40.8	ug/L	20	82	22	203			
Acrylonitrile		34.3	ug/L	10	69	60	130			
Benzene		4.80	ug/L	0.50	96	71	133			
Bromobenzene		5.16	ug/L	0.50	103	78	133			
Bromochloromethane		5.12	ug/L	0.50	102	68	131			
Bromodichloromethane		5.04	ug/L	0.50	101	67	138			
Bromoform		4.72	ug/L	0.50	94	64	136			
Bromomethane		4.92	ug/L	0.50	98	60	138			
n-Butylbenzene		4.92	ug/L	0.50	98	72	135			
sec-Butylbenzene		5.28	ug/L	0.50	106	73	135			
tert-Butylbenzene		5.12	ug/L	0.50	102	69	137			
Carbon disulfide		5.32	ug/L	0.50	106	46	145			
Carbon tetrachloride		4.88	ug/L	0.50	98	61	144			
Chlorobenzene		4.88	ug/L	0.50	98	78	136			
Chlorodibromomethane		4.92	ug/L	0.50	98	72	136			
Chloroethane		5.28	ug/L	0.50	106	64	136			
2-Chloroethyl vinyl ether		3.19	ug/L	0.50	64	64	132			
Chloroform		4.60	ug/L	0.50	92	69	133			
Chloromethane		4.84	ug/L	0.50	97	63	149			
2-Chlorotoluene		5.28	ug/L	0.50	106	74	135			
4-Chlorotoluene		5.08	ug/L	0.50	102	79	135			
1,2-Dibromo-3-chloropropane		4.76	ug/L	1.0	95	63	125			
1,2-Dibromoethane		4.48	ug/L	0.50	90	75	131			
Dibromomethane		4.72	ug/L	0.50	94	72	133			
1,2-Dichlorobenzene		5.08	ug/L	0.50	102	78	129			
1,3-Dichlorobenzene		5.04	ug/L	0.50	101	79	132			
1,4-Dichlorobenzene		4.88	ug/L	0.50	98	78	131			
Dichlorodifluoromethane		6.52	ug/L	0.50	130	55	141			
1,1-Dichloroethane		5.04	ug/L	0.50	101	72	130			
1,2-Dichloroethane		4.60	ug/L	0.50	92	57	146			
1,1-Dichloroethene		5.12	ug/L	0.50	102	66	142			
cis-1,2-Dichloroethene		5.08	ug/L	0.50	102	74	133			
trans-1,2-Dichloroethene		4.60	ug/L	0.50	92	76	138			
1,2-Dichloropropane		4.72	ug/L	0.50	94	72	135			
1,3-Dichloropropane		4.40	ug/L	0.50	88	75	134			
2,2-Dichloropropane		4.80	ug/L	0.50	96	42	167			
1,1-Dichloropropene		4.52	ug/L	0.50	90	72	140			
cis-1,3-Dichloropropene		4.08	ug/L	0.50	82	75	132			
trans-1,3-Dichloropropene		4.24	ug/L	0.50	85	77	145			
Ethylbenzene		4.80	ug/L	0.50	96	78	131			
Hexachlorobutadiene		5.20	ug/L	0.50	104	65	141			
2-Hexanone		45.6	ug/L	10	91	72	131			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278582	
Lab ID: LCS042417	76	Laboratory Control Sample				Run: SUB-B278582			04/24/17 10:40	
Iodomethane		3.72	ug/L	1.0	74	66	132			
Isopropylbenzene		5.28	ug/L	0.50	106	72	135			
p-Isopropyltoluene		5.08	ug/L	0.50	102	71	134			
Methyl tert-butyl ether (MTBE)		4.68	ug/L	0.50	94	58	151			
Methyl ethyl ketone		45.2	ug/L	10	90	55	145			
Methyl isobutyl ketone		42.8	ug/L	10	86	73	129			
Methylene chloride		5.12	ug/L	0.50	102	73	126			
Naphthalene		4.76	ug/L	0.50	95	55	139			
n-Propylbenzene		5.12	ug/L	0.50	102	70	139			
Styrene		4.88	ug/L	0.50	98	76	134			
1,1,1,2-Tetrachloroethane		4.56	ug/L	0.50	91	75	135			
1,1,2,2-Tetrachloroethane		4.84	ug/L	0.50	97	72	132			
Tetrachloroethene		4.88	ug/L	0.50	98	78	137			
Toluene		4.76	ug/L	0.50	95	78	134			
1,2,3-Trichlorobenzene		4.80	ug/L	0.50	96	42	152			
1,2,4-Trichlorobenzene		4.60	ug/L	0.50	92	58	142			
1,1,1-Trichloroethane		4.68	ug/L	0.50	94	64	141			
1,1,2-Trichloroethane		4.52	ug/L	0.50	90	72	133			
Trichloroethene		4.56	ug/L	0.50	91	75	138			
Trichlorofluoromethane		4.88	ug/L	0.50	98	58	139			
1,2,3-Trichloropropane		4.88	ug/L	0.50	98	67	133			
1,2,4-Trimethylbenzene		5.08	ug/L	0.50	102	71	129			
1,3,5-Trimethylbenzene		5.24	ug/L	0.50	105	68	135			
Vinyl acetate		4.00	ug/L	1.0	80	31	124			
Vinyl chloride		5.88	ug/L	0.50	118	66	140			
m+p-Xylenes		9.56	ug/L	0.50	96	78	133			
o-Xylene		4.84	ug/L	0.50	97	79	136			
Xylenes, Total		14.4	ug/L	0.50	96	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	100	70	130			
Surr: Dibromofluoromethane				0.50	107	77	126			
Surr: p-Bromofluorobenzene				0.50	104	76	127			
Surr: Toluene-d8				0.50	102	79	122			
Lab ID: BLK042417	76	Method Blank				Run: SUB-B278582			04/24/17 11:44	
Acetonitrile		ND	ug/L	20						
Acetone		ND	ug/L	10						
Acrolein		ND	ug/L	20						
Acrylonitrile		ND	ug/L	10						
Benzene		ND	ug/L	0.50						
Bromobenzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R278582
Lab ID: BLK042417	76	Method Blank				Run: SUB-B278582				04/24/17 11:44
n-Butylbenzene		ND	ug/L	0.50						
sec-Butylbenzene		ND	ug/L	0.50						
tert-Butylbenzene		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
2-Chloroethyl vinyl ether		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
2-Chlorotoluene		ND	ug/L	0.50						
4-Chlorotoluene		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	0.30						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,3-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
1,3-Dichloropropane		ND	ug/L	0.50						
2,2-Dichloropropane		ND	ug/L	0.50						
1,1-Dichloropropene		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.30						
Ethylbenzene		ND	ug/L	0.50						
Hexachlorobutadiene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						
Isopropylbenzene		ND	ug/L	0.50						
p-Isopropyltoluene		ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Naphthalene		ND	ug/L	0.50						
n-Propylbenzene		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278582	
Lab ID: BLK042417	76	Method Blank				Run: SUB-B278582			04/24/17 11:44	
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,2,3-Trichlorobenzene		ND	ug/L	0.50						
1,2,4-Trichlorobenzene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
1,2,4-Trimethylbenzene		ND	ug/L	0.50						
1,3,5-Trimethylbenzene		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	0.40						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				0.50	102	70	130			
Surr: Dibromofluoromethane				0.50	104	77	126			
Surr: p-Bromofluorobenzene				0.50	116	76	127			
Surr: Toluene-d8				0.50	101	79	122			
Lab ID: B17041151-002AMS	76	Sample Matrix Spike				Run: SUB-B278582			04/24/17 15:28	
Acetonitrile		59.2	ug/L	20	118	54	142			
Acetone		227	ug/L	10	126	62	130			E
Acrolein		ND	ug/L	20	0	22	203			S
Acrylonitrile		ND	ug/L	10	0	60	130			S
Benzene		5.04	ug/L	0.50	101	71	133			
Bromobenzene		5.44	ug/L	0.50	109	78	133			
Bromochloromethane		5.40	ug/L	0.50	108	68	131			
Bromodichloromethane		5.48	ug/L	0.50	110	67	138			
Bromoform		8.56	ug/L	0.50	120	64	136			
Bromomethane		3.56	ug/L	0.50	71	60	138			
n-Butylbenzene		4.44	ug/L	0.50	89	72	135			
sec-Butylbenzene		5.16	ug/L	0.50	103	73	135			
tert-Butylbenzene		5.20	ug/L	0.50	104	69	137			
Carbon disulfide		5.00	ug/L	0.50	100	46	145			
Carbon tetrachloride		5.32	ug/L	0.50	106	61	144			
Chlorobenzene		5.00	ug/L	0.50	100	78	136			
Chlorodibromomethane		5.48	ug/L	0.50	110	72	136			
Chloroethane		5.40	ug/L	0.50	108	64	136			
2-Chloroethyl vinyl ether		ND	ug/L	0.50	0	64	132			S
Chloroform		4.84	ug/L	0.50	97	69	133			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

E - Estimated value. Result exceeds the instrument upper quantitation limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278582	
Lab ID: B17041151-002AMS	76	Sample Matrix Spike				Run: SUB-B278582			04/24/17 15:28	
Chloromethane		5.60	ug/L	0.50	112	63	149			
2-Chlorotoluene		5.44	ug/L	0.50	109	74	135			
4-Chlorotoluene		4.52	ug/L	0.50	90	79	135			
1,2-Dibromo-3-chloropropane		5.84	ug/L	1.0	117	63	125			
1,2-Dibromoethane		4.80	ug/L	0.50	96	75	131			
Dibromomethane		5.32	ug/L	0.50	106	72	133			
1,2-Dichlorobenzene		5.24	ug/L	0.50	105	78	129			
1,3-Dichlorobenzene		5.12	ug/L	0.50	102	79	132			
1,4-Dichlorobenzene		5.04	ug/L	0.50	101	78	131			
Dichlorodifluoromethane		6.72	ug/L	0.50	134	55	141			
1,1-Dichloroethane		5.24	ug/L	0.50	105	72	130			
1,2-Dichloroethane		5.20	ug/L	0.50	104	57	146			
1,1-Dichloroethene		1.51	ug/L	0.50	30	66	142			S
cis-1,2-Dichloroethene		1.71	ug/L	0.50	34	74	133			S
trans-1,2-Dichloroethene		ND	ug/L	0.50	0	76	138			S
1,2-Dichloropropane		5.00	ug/L	0.50	100	72	135			
1,3-Dichloropropane		4.52	ug/L	0.50	90	75	134			
2,2-Dichloropropane		5.24	ug/L	0.50	105	42	167			
1,1-Dichloropropene		ND	ug/L	0.50	0	72	140			S
cis-1,3-Dichloropropene		ND	ug/L	0.50	0	75	132			S
trans-1,3-Dichloropropene		ND	ug/L	0.50	0	77	145			S
Ethylbenzene		4.88	ug/L	0.50	98	78	131			
Hexachlorobutadiene		4.76	ug/L	0.50	95	65	141			
2-Hexanone		51.6	ug/L	10	103	72	131			
Iodomethane		1.85	ug/L	1.0	37	66	132			S
Isopropylbenzene		5.40	ug/L	0.50	108	72	135			
p-Isopropyltoluene		4.88	ug/L	0.50	98	71	134			
Methyl tert-butyl ether (MTBE)		5.28	ug/L	0.50	106	58	151			
Methyl ethyl ketone		66.0	ug/L	10	106	55	145			
Methyl isobutyl ketone		52.0	ug/L	10	104	73	129			
Methylene chloride		5.80	ug/L	0.50	116	73	126			
Naphthalene		3.69	ug/L	0.50	74	55	139			
n-Propylbenzene		5.20	ug/L	0.50	104	70	139			
Styrene		ND	ug/L	0.50	0	76	134			S
1,1,1,2-Tetrachloroethane		4.92	ug/L	0.50	98	75	135			
1,1,2,2-Tetrachloroethane		5.68	ug/L	0.50	114	72	132			
Tetrachloroethene		4.84	ug/L	0.50	97	78	137			
Toluene		4.92	ug/L	0.50	98	78	134			
1,2,3-Trichlorobenzene		4.32	ug/L	0.50	86	42	152			
1,2,4-Trichlorobenzene		4.24	ug/L	0.50	85	58	142			
1,1,1-Trichloroethane		5.16	ug/L	0.50	103	64	141			
1,1,2-Trichloroethane		5.04	ug/L	0.50	101	72	133			
Trichloroethene		2.62	ug/L	0.50	52	75	138			S
Trichlorofluoromethane		5.40	ug/L	0.50	108	58	139			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278582	
Lab ID: B17041151-002AMS	76	Sample Matrix Spike				Run: SUB-B278582			04/24/17 15:28	
1,2,3-Trichloropropane		5.44	ug/L	0.50	109	67	133			
1,2,4-Trimethylbenzene		4.12	ug/L	0.50	82	71	129			
1,3,5-Trimethylbenzene		ND	ug/L	0.50	0	68	135			S
Vinyl acetate		ND	ug/L	1.0	0	31	124			S
Vinyl chloride		ND	ug/L	0.50	0	66	140			S
m+p-Xylenes		9.60	ug/L	0.50	96	78	133			
o-Xylene		4.80	ug/L	0.50	96	79	136			
Xylenes, Total		14.4	ug/L	0.50	96	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	110	70	130			
Surr: Dibromofluoromethane				0.50	107	77	126			
Surr: p-Bromofluorobenzene				0.50	105	76	127			
Surr: Toluene-d8				0.50	99	79	122			
- Several compounds were not recovered in the matrix spike sample performed on this sample. The sample likely contains potassium permanganate, which is an oxidizing agent. The compounds appear to have reacted with the sample matrix. The recoveries for these compounds were normal in the Laboratory Control Sample (LCS).										
Lab ID: B17041151-002AMSD	76	Sample Matrix Spike Duplicate				Run: SUB-B278582			04/24/17 16:00	
Acetonitrile		62.0	ug/L	20	124	54	142	4.6	20	
Acetone		224	ug/L	10	120	62	130	1.2	20	E
Acrolein		ND	ug/L	20	0	22	203		20	S
Acrylonitrile		ND	ug/L	10	0	60	130		20	S
Benzene		5.28	ug/L	0.50	106	71	133	4.7	20	
Bromobenzene		5.60	ug/L	0.50	112	78	133	2.9	20	
Bromochloromethane		5.80	ug/L	0.50	116	68	131	7.1	20	
Bromodichloromethane		5.64	ug/L	0.50	113	67	138	2.9	20	
Bromoform		8.64	ug/L	0.50	122	64	136	0.9	20	
Bromomethane		3.95	ug/L	0.50	79	60	138	11	20	
n-Butylbenzene		4.80	ug/L	0.50	96	72	135	7.8	20	
sec-Butylbenzene		5.32	ug/L	0.50	106	73	135	3.1	20	
tert-Butylbenzene		5.32	ug/L	0.50	106	69	137	2.3	20	
Carbon disulfide		4.76	ug/L	0.50	95	46	145	4.9	20	
Carbon tetrachloride		5.36	ug/L	0.50	107	61	144	0.7	20	
Chlorobenzene		5.20	ug/L	0.50	104	78	136	3.9	20	
Chlorodibromomethane		5.72	ug/L	0.50	114	72	136	4.3	20	
Chloroethane		5.68	ug/L	0.50	114	64	136	5.1	20	
2-Chloroethyl vinyl ether		ND	ug/L	0.50	0	64	132		20	S
Chloroform		5.08	ug/L	0.50	102	69	133	4.8	20	
Chloromethane		5.24	ug/L	0.50	105	63	149	6.6	20	
2-Chlorotoluene		5.44	ug/L	0.50	109	74	135	0.0	20	
4-Chlorotoluene		4.64	ug/L	0.50	93	79	135	2.6	20	
1,2-Dibromo-3-chloropropane		6.00	ug/L	1.0	120	63	125	2.7	20	
1,2-Dibromoethane		5.08	ug/L	0.50	102	75	131	5.7	20	
Dibromomethane		5.56	ug/L	0.50	111	72	133	4.4	20	
1,2-Dichlorobenzene		5.56	ug/L	0.50	111	78	129	5.9	20	
1,3-Dichlorobenzene		5.36	ug/L	0.50	107	79	132	4.6	20	
1,4-Dichlorobenzene		5.16	ug/L	0.50	103	78	131	2.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

E - Estimated value. Result exceeds the instrument upper quantitation limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R278582	
Lab ID: B17041151-002AMSD	76	Sample Matrix Spike Duplicate				Run: SUB-B278582			04/24/17 16:00	
Dichlorodifluoromethane		6.80	ug/L	0.50	136	55	141	1.2	20	
1,1-Dichloroethane		5.40	ug/L	0.50	108	72	130	3.0	20	
1,2-Dichloroethane		5.16	ug/L	0.50	103	57	146	0.8	20	
1,1-Dichloroethene		0.480	ug/L	0.50	10	66	142		20	S
cis-1,2-Dichloroethene		0.720	ug/L	0.50	14	74	133	81	20	SR
trans-1,2-Dichloroethene		ND	ug/L	0.50	0	76	138		20	S
1,2-Dichloropropane		5.16	ug/L	0.50	103	72	135	3.1	20	
1,3-Dichloropropane		4.68	ug/L	0.50	94	75	134	3.5	20	
2,2-Dichloropropane		5.12	ug/L	0.50	102	42	167	2.3	20	
1,1-Dichloropropene		ND	ug/L	0.50	0	72	140		20	S
cis-1,3-Dichloropropene		ND	ug/L	0.50	0	75	132		20	S
trans-1,3-Dichloropropene		ND	ug/L	0.50	0	77	145		20	S
Ethylbenzene		4.88	ug/L	0.50	98	78	131	0.0	20	
Hexachlorobutadiene		5.16	ug/L	0.50	103	65	141	8.1	20	
2-Hexanone		55.2	ug/L	10	110	72	131	6.7	20	
Iodomethane		1.76	ug/L	1.0	35	66	132	5.1	20	S
Isopropylbenzene		5.36	ug/L	0.50	107	72	135	0.7	20	
p-Isopropyltoluene		4.96	ug/L	0.50	99	71	134	1.6	20	
Methyl tert-butyl ether (MTBE)		5.20	ug/L	0.50	104	58	151	1.5	20	
Methyl ethyl ketone		72.4	ug/L	10	119	55	145	9.2	20	
Methyl isobutyl ketone		52.4	ug/L	10	105	73	129	0.8	20	
Methylene chloride		6.36	ug/L	0.50	127	73	126	9.2	20	S
Naphthalene		3.53	ug/L	0.50	71	55	139	4.5	20	
n-Propylbenzene		5.16	ug/L	0.50	103	70	139	0.8	20	
Styrene		0.181	ug/L	0.50	4	76	134		20	S
1,1,1,2-Tetrachloroethane		5.04	ug/L	0.50	101	75	135	2.4	20	
1,1,2,2-Tetrachloroethane		5.84	ug/L	0.50	117	72	132	2.8	20	
Tetrachloroethene		4.76	ug/L	0.50	95	78	137	1.7	20	
Toluene		5.00	ug/L	0.50	100	78	134	1.6	20	
1,2,3-Trichlorobenzene		5.12	ug/L	0.50	102	42	152	17	20	
1,2,4-Trichlorobenzene		4.72	ug/L	0.50	94	58	142	11	20	
1,1,1-Trichloroethane		5.20	ug/L	0.50	104	64	141	0.8	20	
1,1,2-Trichloroethane		5.24	ug/L	0.50	105	72	133	3.9	20	
Trichloroethene		1.39	ug/L	0.50	28	75	138	61	20	SR
Trichlorofluoromethane		5.28	ug/L	0.50	106	58	139	2.2	20	
1,2,3-Trichloropropane		5.64	ug/L	0.50	113	67	133	3.6	20	
1,2,4-Trimethylbenzene		3.06	ug/L	0.50	61	71	129	30	20	SR
1,3,5-Trimethylbenzene		ND	ug/L	0.50	0	68	135		20	S
Vinyl acetate		ND	ug/L	1.0	0	31	124		20	S
Vinyl chloride		ND	ug/L	0.50	0	66	140		20	S
m+p-Xylenes		9.12	ug/L	0.50	91	78	133	5.1	20	
o-Xylene		4.92	ug/L	0.50	98	79	136	2.5	20	
Xylenes, Total		14.0	ug/L	0.50	94	78	136			
Surr: 1,2-Dichloroethane-d4				0.50	112	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CTA Construction and Environmental LLC **Report Date:** 04/26/17

Project: Carriage Trade Cleaners **Work Order:** H17040246

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R278582
Lab ID: B17041151-002AMSD	76	Sample Matrix Spike Duplicate				Run: SUB-B278582				04/24/17 16:00
Surr: Dibromofluoromethane				0.50	109	77	126			
Surr: p-Bromofluorobenzene				0.50	105	76	127			
Surr: Toluene-d8				0.50	99	79	122			

- Several compounds were not recovered in the matrix spike sample performed on this sample. The sample likely contains potassium permanganate, which is an oxidizing agent. The compounds appear to have reacted with the sample matrix. The recoveries for these compounds were normal in the Laboratory Control Sample (LCS).

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

CTA Construction and Environmental LLC H17040246

Login completed by: Tracy L. Lorash
Date Received: 4/13/2017
Reviewed by: BL2000\rtooke
Received by: bjs
Reviewed Date: 4/14/2017
Carrier name: UPS ARS Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	1.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

No collection date or time on COC or vials for Duplicate sample. Estimated date and time in the laboratory.
One vial for Volatile Organics analysis contains headspace gas bubble(s) greater than or equal to 1/4 inch in diameter for sample GHB-54s. tl 4/14/17

ENERGY
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

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Page _____ of _____

Account Information (Billing information)

Company/Name	CTA Construction + Environmental
Contact	Alan Frohberg
Phone	(406) 452-3321
Mailing Address	219 2nd Ave. S
City, State, Zip	Great Falls, MT 59405
Email	alanf@ctagroup.com
Receive Invoice	☐Hard Copy ☒Email
Receive Report	☐Hard Copy ☒Email
Purchase Order	GF13024.9
Quote	1384
Bottle Order	23579

Report Information (if different than Account Information)

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report	☐Hard Copy ☐Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Project Information

Project Name, PWSID, Permit, etc.	Carriage Trade Cleaners
Sampler Name	Ross
Sampler Phone	(406) 452-3321
Sample Origin State	MT
EPA/State Compliance	☒ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	8260 - VOCs	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	HGF-4s	4.11.17	1026		W	X			H17040246
2	GHB-54s		1130						
3	HGF-19s		1316						
4	HGF-18s		1434						
5	HGF-9s		1503						
6	GHB-46s	4.12.17	1325						
7	GHB-7s	4.12.17	1343						
8	Duplicate								
9									
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Ross Remsen	4.12.17 / 1600				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				B. Seiler	4/13/17 10:52	Brandy Sahu

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	Ice	Payment Type	Amount	Receipt Number (cash/check only)
UPS GRS	412	Y N C B	Y N	1.6 °C	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

ENVIRONMENTAL

APPENDIX G

Data Validation Reports

ENVIRONMENTAL

Data Validation Report

1) **Project Name:** Carriage Trade Cleaners

Name and Date of approved Quality Assurance Project Plan (QAPP), Sampling Analysis Plan (SAP), or other applicable document: DEQ Contract 414025 - Task Order No.9; sent to CTA on March 9, 2017, and signed by CTA on March 18, 2017. DEQ Low-Flow Guide (April 18, 2005). CTA Standard Operating Procedure CTA46.

Laboratory Name: Energy Laboratories, Inc.

Laboratory Project ID: H17030482

Sample Matrix: Aqueous

Sample Start and End Dates: March 28, 2017 to March 29, 2017

Parameters Included: 8260-Volatile Organic Compounds-Extended List, as required by DEQ.

Date Validated: April 17, 2017

Name of Validator: Ross Remsen

2) Data Validation Used: CTA validated all analytical data in accordance with Montana Department of Environmental Quality Data Validation Guidelines for Evaluating Analytical Data, updated November 4, 2016. Each sampling event included one duplicate and one trip blank (supplied by the laboratory) as requested by DEQ.

3) Samples Evaluated in this Report:

Field Sample ID	Laboratory ID
HGF-4s	H17030482-001
HGF-19s	H17030482-002
HGF-18s	H17030482-003
HGF-17s	H17030482-004
HGF-9s	H17030482-005
GHB-7s	H17030482-006
GHB-54s	H17030482-007
GHB-46s	H17030482-008
Duplicate	H17030482-009
Trip Blank	H17030482-010

4) Data Description of Acceptability and Usability of Data:

- All data were accepted and are usable for project decisions. Results discussed in section 4.3 of the report.
- Some data were flagged by the laboratory as estimated ("J" qualifier, analytes were reported as being present at a concentration less than the method reporting limit (RL)).

5) Data Qualifiers Used:
The laboratory used the following qualifiers:
J – The analyte was reported as being present at a concentration less than the reporting limit.
S – Spike recovery outside of advisory limits.
R - Relative Percent Difference (RPD) exceeds advisory limit.

No data were flagged or qualified as a result of the data validation process.

6) Nonconformance Issues: None

7) Were Chain-of-Custody (CoC) Forms Complete: The CoC records were complete as confirmed with field and laboratory personal signatures, dates, and times of receipt. The lab did contact CTA because the CoC did not contain the Duplicate sample, which was labeled "Duplicate". CTA confirmed to analyze duplicate sample.

8) Were Detection Limits in Accordance with the Project Requirements: Yes

9) Were the Requested Analytical Methods in Compliance with Project Requirements: Yes. Sample from GHB-7s was only analyzed for the 8260-VOCs-Short list due to the lack of water in the well.

10) Were Samples Received in Good Condition Within Method Specified Requirements? Samples were received in good condition. The laboratory-measured temperature of the temperature blank was 7.3 degrees Celsius, which is slightly higher than the required temperature of 2-6 degrees Celsius. However, the samples were delivered on ice, and the samples were also delivered to the laboratory the same day they were collected. It may be that some of the samples did not have time to chill before they arrived at the laboratory. The slightly higher temperature may cause the results to be biased low; however, the impact is expected to be minimal since the samples were properly cooled upon receipt at the lab and until sample extraction.

11) Were Samples Analyzed Within Method Specified or Technical Holding Times? Yes

12) Were Reported Units Appropriate for the Associated Sample Matrix/Matrices and Method(s) of Analyses? Yes

13) Do the Laboratory Reports Include all Constituents Requested to be Analyzed? Yes

14) Was there Indication from the Laboratory that the Initial or Continuing Calibration Verification Results Were Within Acceptable Limits? Yes. The CCV results were slightly low for Iodomethane (65 % recovered versus the low limit of 70%), but this is the only compound that was outside the CCV limit. Iodomethane is not a contaminant of concern for this investigation, and it was not detected in any of the samples; therefore, no data was qualified as a result of this deviation.

15) Was the Total Number of Method Blank Samples Prepared Equal to at Least 5% of the Total Number of Samples, or Analyzed as Required by the Method? Yes

16) Were laboratory Blank Samples Free of Analyte Contamination? Yes

17) Was the Total Number of Matrix Spike Samples Prepared Equal to at Least 5% of the Total Number of Samples, or Analyzed as Required by the Method? Yes

18) Please Provide a Discussion of Project Samples Used for MS/MSD, if Applicable. Not applicable, all MS/MSD analyses were performed on laboratory QA/QC samples.

19) Were MS/MSD Percent Recoveries and MS/MSD Relative Percent Difference (RPD) Within Data Validation or Laboratory QC Limits? Two batches of MS/MSD were run. In the first batch (B17040265-001), iodomethane and tetrachloroethylene (PCE) had % recoveries slightly lower than the lab-specified "low limit." As described above, iodomethane is not a COC for this investigation and was not detected in natural samples, so no data was qualified. In this MS/MSD batch, PCE was recovered at 75% and 76%, compared to the lab-specified "low limit" of 78%. However, in the second MS/MSD batch (B17040178-001), PCE % recoveries were within the control limits. Based on the acceptable recoveries for PCE in the second MS/MSD batch, no PCE results were qualified. In the second batch of MS/MSD, all analytes were within control limits with the exception of the MSD for acetonitrile, which was listed as R (RPD exceeds advisory limit) and iodomethane, which had a low spike recovery. Neither iodomethane nor acetonitrile are COCs for this investigation, and neither were detected in the natural samples, so no data was qualified as a result of the MS/MSD deviations.

20) Was the Reference Material Used for the Laboratory Control Standard (LCS) the Correct Matrix Concentration? Yes

21) Was the Total Number of LCS Samples Analyzed Equal to at Least 5% of the Total Number of Samples, or Analyzed as Required by the Method? Yes

22) Were LCSs Prepared in the Same Way as the Associated Samples? There is no indication in the laboratory report regarding how the LCSs were prepared, and it is assumed they were prepared appropriately.

23) Were LCS/LCSD Percent Recoveries and LCS/LCSD RPDs Within Laboratory QC Limits? Yes

24) Were Surrogate Recoveries Within Laboratory QC Limits? Yes

25) Were the Number of Equipment, trip, or Field Blanks Collected Equal to at Least 10% of the Total Number of Samples, or as Required by the Project Requirements? Yes. Eight natural samples were collected, one duplicate was collected, and one trip blank was collected.

26) Were the Trip Blank, Field Blank, and/or Equipment Blank Samples Free of Analyte Contamination? Yes.

27) Were the Field Duplicates Collected as Required by the Project Requirements? Yes. Results found in Table 1 of the report.

28) Were Field Duplicate RPD Values Within Data Validation QC Limits? Yes, the calculated differences for results ranged from 8-20%, which are within the generally accepted range of 0-30%.

29) Were Laboratory Duplicate RPD Values Within Laboratory-Specified Limits? Laboratory duplicates were limited to MS/MSD and LCS/LCSD samples. See answers to 19 and 23 above.

30) If Any Data Were Qualified, Please Provide a Data Qualification Summary?

Analyte	Sample ID	Laboratory ID	Laboratory Results	Validator Qualifier	Reason for Qualification
Cis-1,2-Dichloroethene	HGF-17s	H17030482-004	0.26	J	The analyte was reported as being present at a concentration less than the reporting limit. Result is estimated value.
TCE	GHB-7s GHB-54s	H17030482-006 H17030482-007	0.96 0.59	J	The analyte was reported as being present at a concentration less than the reporting limit. Result is estimated value.

31) If DEQ Collected Split Samples, Explain How Those Results Compare to the Natural Sample. Not applicable

ENVIRONMENTAL

Data Validation Report

1) **Project Name:** Carriage Trade Cleaners

Name and Date of approved Quality Assurance Project Plan (QAPP), Sampling Analysis Plan (SAP), or other applicable document: DEQ Contract 414025 - Task Order No.9; sent to CTA on March 9, 2017, and signed by CTA on March 18, 2017. DEQ Low-Flow Guide (April 18, 2005). CTA Standard Operating Procedure CTA46.

Laboratory Name: Energy Laboratories, Inc.

Laboratory Project ID: H17040246

Sample Matrix: Aqueous

Sample Start and End Dates: April 11, 2017 to April 12, 2017

Parameters Included: 8260-Volatile Organic Compounds-Extended List, as required by DEQ.

Date Validated: April 26, 2017

Name of Validator: Ross Remsen

2) Data Validation Used: CTA validated all analytical data in accordance with Montana Department of Environmental Quality Data Validation Guidelines for Evaluating Analytical Data, updated November 4, 2016. Each sampling event included one duplicate and one trip blank (supplied by the laboratory) as requested by DEQ.

3) Samples Evaluated in this Report:

Field Sample ID	Laboratory ID	
HDG-4s	H17040246-001	note: actual well is HGF-4s (Energy Lab mislabeled)
GHB-54s	H17040246-002	
HGF-19s	H17040246-003	
HGF-18s	H17040246-004	
HGF-9s	H17040246-005	
GHB-46s	H17040246-006	
GHB-7s	H17040246-007	
Duplicate	H17040246-008	
Trip Blank	H17040246-009	

4) Data Description of Acceptability and Usability of Data:

- All data were accepted and are usable for projected decisions. Results discussed in section 4.3 of the report.
- Some data were flagged by the laboratory as estimated ("J" qualifier, analytes were reported as being present at a concentration less than the method reporting limit (RL)).

5) Data Qualifiers Used:
The laboratory used the following qualifiers:
J – The analyte was reported as being present at a concentration less than the reporting limit.
S – Spike recovery outside of advisory limits.
E – Estimated value. Result exceeds the instrument upper quantitation limit.
R – Relative Percent Difference (RPD) exceeds advisory limit.

No data were flagged or qualified as a result of the data validation process.

6) Nonconformance Issues: None.

7) Were Chain-of-Custody (CoC) Forms Complete: The CoC records were complete as confirmed with field and laboratory personal signatures, dates, and times of receipt.

8) Were Detection Limits in Accordance with the Project Requirements: Yes

9) Were the Requested Analytical Methods in Compliance with Project Requirements: Yes.

10) Were Samples Received in Good Condition Within Method Specified Requirements? One vial for Volatile Organics analysis contains headspace gas bubble(s) greater than or equal to 1/4 inch in diameter for sample GHB-54s. The laboratory did not use the sample from this vial for analyses; therefore, the results are not affected.

11) Were Samples Analyzed Within Method Specified or Technical Holding Times? Yes

12) Were Reported Units Appropriate for the Associated Sample Matrix/Matrices and Method(s) of Analyses? Yes

13) Do the Laboratory Reports Include all Constituents Requested to be Analyzed? Yes

14) Was there Indication from the Laboratory that the Initial or Continuing Calibration Verification Results Were Within Acceptable Limits? Yes

15) Was the Total Number of Method Blank Samples Prepared Equal to at Least 5% of the Total Number of Samples, or Analyzed as Required by the Method? Yes

16) Were laboratory Blank Samples Free of Analyte Contamination? Yes

17) Was the Total Number of Matrix Spike Samples Prepared Equal to at Least 5% of the Total Number of Samples, or Analyzed as Required by the Method? Yes

18) Please Provide a Discussion of Project Samples Used for MS/MSD, if Applicable. Project sample H17040246-001 was used in the first batch of MS/MSD. The second MS/MSD batch was not a project sample.

19) Were MS/MSD Percent Recoveries and MS/MSD Relative Percent Difference (RPD) Within Data Validation or Laboratory QC Limits? The MS/MSD results on the project sample H17040246-001 were all within acceptable limits, except for iodomethane, which had spike recoveries less than the low limit. Iodomethane is not a contaminant of concern for the site, and was not detected in any of the natural samples; therefore, no qualification is necessary. The second batch of MS/MSD results (not from this project) had a number of qualifications. According to Energy Labs several compounds were not recovered in the matrix spike sample performed on this sample (B17041151-002), because the sample likely contains potassium permanganate, which is an oxidizing agent. The compounds appear to have reacted with the sample matrix. The recoveries for these compounds were normal in the Laboratory Control Sample (LCS). The qualified MS/MSD results on the non-project sample do not cause the project samples to be qualified.

20) Was the Reference Material Used for the Laboratory Control Standard (LCS) the Correct Matrix Concentration? Yes

21) Was the Total Number of LCS Samples Analyzed Equal to at Least 5% of the Total Number of Samples, or Analyzed as Required by the Method? Yes

22) Were LCSs Prepared in the Same Way as the Associated Samples?
There is no indication in the laboratory report regarding how the LCSs were prepared, and it is assumed they were prepared appropriately.

23) Were LCS/LCSD Percent Recoveries and LCS/LCSD RPDs Within Laboratory QC Limits? Yes, except for one compound, bromomethane, which had 51% recovery, which is less than the low limit of 60%. Bromomethane was not detected in the natural samples, and is not a contaminant of concern for this site. No data was qualified as a result of this deviation.

24) Were Surrogate Recoveries Within Laboratory QC Limits? In sample GHB-46s, the p-bromofluorobenzene % recovery was 131% compared to the range of 76-127% in one of the two runs of this surrogate, which the other run of this surrogate was within limits. This may indicate a slightly high bias in some results, but no data were qualified because only one of the two surrogate runs was slightly high.

25) Were the Number of Equipment, trip, or Field Blanks Collected Equal to at Least 10% of the Total Number of Samples, or as Required by the Project Requirements? Yes. Seven natural samples were collected, one duplicate was collected, and one trip blank was collected.

26) Were the Trip Blank, Field Blank, and/or Equipment Blank Samples Free of Analyte Contamination? Yes. The trip blank was free of contamination.

27) Were the Field Duplicates Collected as Required by the Project Requirements? Yes. Results found in Table 1 of the report.

28) Were Field Duplicate RPD Values Within Data Validation QC Limits? Yes, the calculated difference for results was 0%, all results were non-detect (ND).

29) Were Laboratory Duplicate RPD Values Within Laboratory-Specified Limits? Laboratory duplicates were limited to MS/MSD and LCS/LCSD samples. See answers to 19 and 23 above.

30) If Any Data Were Qualified, Please Provide a Data Qualification Summary?

Analyte	Sample ID	Laboratory ID	Laboratory Results	Validator Qualifier	Reason for Qualification
TCE	GHB-54s	H17040246-002	0.74	J	The analyte was reported as being present at a concentration less than the reporting limit. Result is estimated value.

31) If DEQ Collected Split Samples, Explain How Those Results Compare to the Natural Sample. Not applicable

ENVIRONMENTAL

APPENDIX H

Standard Operating Procedures

EQUIPMENT:

Oil/water interface or water level probe
pH meter
Coolers and ice
Specific conductance meter
Sample bottles
Peristaltic or submersible pump
Preservatives
Dissolved oxygen meter
Decontamination equipment and fluids
Oxidation-reduction potential meter
Filter apparatus
Temperature meter
Indelible marker
Field sampling forms
Flow through cell

All sampling equipment must be inspected for damage, and repaired if necessary, prior to arriving on-site.

LOW-FLOW PURGING:

Depth to Groundwater and LNAPL Thickness Measurements.

Prior to purging or sampling each well, the depth to groundwater and light non-aqueous phase liquids (LNAPL) thickness (if present) will be measured. Depth to groundwater will be measured using a water level electric probe. LNAPL thickness will be measured using an oil/water interface probe. All probes will be decontaminated prior to use in accordance with our standard operating procedures for decontamination. The depth to groundwater and free product thickness data will be recorded on a groundwater water sampling log for each well.

Puls and Barcelona (1995) recommend that well depth be obtained from well logs. Measuring the bottom of the well casing will cause re-suspension of settled solids from the formation and require longer purging times for stabilization. **Measure the well depth, if necessary, should be completed after sampling is completed.**

PURGING PROCEDURES:

Wells without LNAPL

Purging will be conducted using a peristaltic or submersible pump. The intake of the pump will be placed approximately 18 inches below the static water level. Water will be purged from the well at a rate that will minimize drawdown in the well, and will keep the water level at least 6 inches above the pump intake. Puls and Barcelona (1995) recommend that drawdown be kept to <0.3

feet. Frequent measurements of depth to groundwater will be required to set pump flow rates.

Dissolved Oxygen (DO), oxidation-reduction potential (ORP), temperature (T), pH, and specific conductance (SC) will be monitored during the purging of each well. These parameters will be measured using field meters and a flow-through cell. Data will be recorded on the groundwater sampling log for each well. Measurements should be taken every three to five minutes.

Purging will continue until pH, SC, and DO stabilize. Stabilization is achieved after all parameters have stabilized for three successive readings. The three successive readings should be within 0.1 for pH, 3%t for specific conductance, and 10% for dissolved oxygen. Preferably, ORP readings should also be within 10 mV.

All field instruments will be calibrated prior to beginning sampling. Instruments will be checked against standards daily. Instruments will be recalibrated as needed. Calibration notes will be kept on daily field logs.

WELLS WITH LNAPL:

Wells with LNAPL will be purged following the procedures presented for purging wells without LNAPL. However, the intake of the purge pump will be placed 18-24 inches below the base of LNAPL. The pump intake will be sealed and lowered to the correct sample depth. The seal will then be removed and purging started.

Depth to the base of LNAPL will be measured frequently during purging to establish flowrate. Flowrate will be adjusted to keep drawdown to <0.3 feet.

Field parameters will be measured during purging as described for purging wells without LNAPL. Purging will continue until field parameters have stabilized.

COLLECTING WATER QUALITY SAMPLES:

Wells shall be sampled from the least contaminated to the most contaminated, if known. Open well, noting condition of well, and measure water level (SOP-06).

Use new disposable or dedicated pump tubing for each well.

Sampling Monitoring Wells

- Collect a water quality sample, using the purge pump and tubing at the same pumping rates for purging.

If sampling for dissolved metals, field filter sample using disposable filter.

Label each sample container with project number, sample location, well owner, date, military time, sampler's initials, preservative, and analysis required. For in organics samples, rinse sample containers, without preservatives, three times with sample water before final collection.

Pour the sample into the appropriate sample containers and any needed preservatives in accordance with SOP GS-6 or the project field sampling plan. See ("Handbook for Sampling and Sample Preservation of Water and Wastewater," EPA-600/4-82-029, "Guidelines Establishing Test Procedures for the Analyses of Pollutants Under the Clean Water Act," 40 CFR 136, and "Test Methods for Evaluating Solid Wastes," EPA SW-846). A few common sample preservatives are listed below:

- Dissolved Metals – Add 3-4 ml. Nitric Acid to 500 ml. sample
- Nutrients – Refrigerate to 4C; Add 3-4 ml. Sulfuric Acid to 500 ml. sample
- Common Ions – Refrigerate to 4C
- Hydrocarbon VOA – Refrigerate to 4C; Add HCl to lower pH to 2.
- Diesel Range Organics – Refrigerate to 4C; Add 80 drops (4ml) HCl
- For additional bottling and sample preservation information, consult the project field sampling plan.

For volatile analyses, add preservative to the sample vial and fill vials at the rate of 100 milliliters per minute (24 seconds for 40 milliliter vial); form a positive meniscus over vial brim and cap. After capping, invert vial, gently tap and look for air bubbles. If bubbles are present, un-cap vial, add more water and repeat procedure.

If required by the project work plan, perform field parameter tests including pH, SC, DO, ORP, and temperature on water sampled from the well. Record field measurements on field forms.

Complete the necessary shipping and handling paperwork, and record all pertinent information on field sampling form in accordance with SOP-08.