# Addendum I to Phase II Environmental Site Assessment: Site Soils Investigation Report

Road Reconstruction
Highway 1804
Williston, North Dakota

*Prepared for*

## DOWL, LLC

## North Dakota Department of Transportation

Project B1603644
April 29, 2016

Braun Intertec Corporation

BRAUN INTERTEC
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April 29, 2016 Project B1603644

DOWL, LLC
Adam McGill
140 1st Street East
Dickinson, North Dakota 58601

Re: Addendum I to Phase II Environmental Site Assessment: Site Soils Investigation Report
Road Reconstruction
Highway 1804
Williston, North Dakota

Dear Mr. McGill:

On behalf of DOWL, LLC, Braun Intertec Corporation conducted additional subsurface sampling of the referenced site in accordance with the authorized scope of services described in our proposal dated March 1, 2016. The additional subsurface sampling was prepared in association the Highway 1804 reconstruction project proposed for the Site.

The purpose of the investigation was to further assist DOWL and the NDDOT with determining the condition and volume of impacted soils that will be encountered during construction along with the presentation of specific recommended actions regarding handling and the final disposition of any impacted soils determined to be present. Additionally, groundwater existing below the Site needed to be evaluated and characterized for dewatering purposes if encountered during construction.

This additional subsurface sampling investigation was prepared on behalf of and for use by DOWL, LLC and North Dakota Department of Transportation (NDDOT). No other party has a right to rely on the contents of this additional subsurface sampling investigation without the written authorization of Braun Intertec.

For a complete discussion of our assessment, please refer to the attached Addendum I to Phase II Environmental Site Assessment: Site Soils Investigation Report.

We appreciate the opportunity to provide our professional services to you for this project. If you have any questions or comments regarding this report or the project in general, please call Josh Kadrmas at 701.492.5895 or Scott Tracy at 952.995.2420.

Sincerely,

BRAUN INTERTEC CORPORATION

Joshua T. Kadrmas, PE
Project Engineer

Stephen E. Jensen For:
Scott C. Tracy, CHMM
VP Environmental Business Unit Manager

Attachment:
Add. I Phase II ESA Report
AA/EOE

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# A. Introduction

## A.1. Authorization

Braun Intertec Corporation received authorization from Mr. Adam McGill of DOWL, LLC (DOWL) to conduct an addendum to the Phase II Environmental Site Assessment (Phase II ESA) – Additional Sampling of the project area along a stretch of Highway 1804 beginning directly east of the Little Muddy River and extending east to 27th Avenue East in Williston, North Dakota (Site). The investigation was done in accordance with the scope of services described in our proposal dated February 3, 2016. The Site Soils Investigation was prepared in association with roadway reconstruction.

This Addendum I to the Phase II ESA was prepared on behalf of and for use by DOWL and the North Dakota Department of Transportation (NDDOT) in accordance with the contract between DOWL and Braun Intertec. Other than DOWL and the NDDOT, no other party has a right to rely on the contents of this Site Soils Investigation without the written authorization of Braun Intertec.

## A.2. Project Objective

The purpose of this additional investigation was to assist DOWL and NDDOT with determining a more specific condition and extent of impacted soil and groundwater that could be encountered during construction, along with recommendations regarding the handling and final disposition of any impacted soil or groundwater, if it is encountered.

# B. Site Background

## B.1. Site Location and Description

The Site is located along a stretch of Highway 1804 beginning directly east of the Little Muddy River and extending east to 27th Avenue East in Williston, North Dakota. The Site is located in an industrial portion of Williston with several oil and gas, railroad, and other industrial services in the area. Soil boring locations for the investigation were placed in the right of way to the north and south of Highway 1804. Specific boring locations and depths were determined based on results from the initial Phase II soil investigation and information provided by DOWL relevant to known areas of concern.

## B.2. Previous Investigation Data

### B.2.a. Site Soils Investigation (Braun Intertec-March, 2016)

Braun Intertec prepared a Phase II ESA Site Soils investigation Report for the Site pursuant to our proposal dated February 3, 2016. Ten soil borings (SB-1 through SB-10) were performed across the Site to a depth of approximately 12 feet. Soils from the borings were field screened with a Photoionization Detector (PID). Two depth-stratified soil samples were collected from each of the borings; one from the depth interval most likely to exhibit impacts and one from the base of the boring. These samples were submitted for laboratory analysis for Diesel Range Organics (DRO), Motor Oil Range Organics (MORO), Gasoline Range Organics (GRO), and Volatile Organic Compounds (VOCs). Based on field soils screening and laboratory results from this investigation, it was determined that SB-7 exhibited elevated GRO and VOC concentrations at a depth of 12 feet below ground surface (bgs). Additional information regarding this investigation is located within the following report:

*Phase II Environmental Site Assessment: Site Soils Investigation, DOWL Engineering and North Dakota Department of Transportation. Prepared by Broun Intertec. March 7, 2016. Project B1601155.*

### B.2.b. Phase I Environmental Assessment (Western Plains Consulting, Inc. – March 2016)

Braun Intertec reviewed the Phase I ESA for the ND Highway 1804 Site Corridor (NDDOT Project 7-804(055)034 written by Western Plains Consulting, Inc. (WPC), dated March 2016. WPC conducted the Phase I ESA along the Highway 1804 corridor associated with the NDDOT Reconstruction project, Project 7-804(055)034. The Phase I ESA was conducted to identify potential sources of impact soils within or adjacent to the project corridor. WPC identified the following property with potential for soil contamination:

- The Old Williston Landfill - according to an interview with Mr. Keller from the United States Army Corps of Engineers (USACE), this location was under consideration by the United States Environmental Protection Agency (EPA) as a potential Superfund site. Additionally, when placing the gate posts to the beach on the south side of Highway 1804, a void was encountered, which later turned out to be a car body, suggesting the landfill may be near, or even under part of the corridor. Older air photographs show the Highway did “curve” to the north coming off the bridge in the past. There were records for a large number of monitoring wells at the old landfill, and it was the USACE interview where WPC learned of the EPA’s activity on this location. The North Dakota Department of Health (NDDH) was aware of the ongoing study of the old Williston Landfill by the EPA, but was not aware the EPA was considering listing the old landfill as a Superfund site.

- The Flying J Refinery site poses another serious concern. A drilling company abandoned impacted monitoring wells along the south edge of Halliburton's property, north of Highway 1804, north of the old building just west of the fence, and south of the Highway. The USACE reported diesel leaching from the base of the embankment just east of the Little Muddy River a "couple" years ago. This was cleaned up. The leaching stopped on its own, and no source was clearly identified. It was suspected that the diesel may have traveled through the ground from the old Flying J site toward the Little Muddy. Additionally, there was the interview with Mr. Houle, who witnessed the explosion of a "large" refinery tank in 1968, possibly causing a large release. Additionally, the sheer number of monitoring wells at the Flying J suggests large-scale impacts. The NDDH provided maps showing plumes did go north, under Highway 1804, to the Halliburton property.

- Oil Field and Other releases. There were currently over 100 oil wells in, or adjacent to, the Site corridor. Since regulation in the 1990s, over 65 releases from these facilities were reported, involving over 170,000 gallons of crude oil, salt-water, crude oil/salt-water emulsion, and acids. This quantity may have been under-reported, and the volume listed above may not represent the actual quantities released. Of these releases, a 200-barrel spill of crude oil from a truck trailer accident in Section 21, Township 154 North, Range 100 West was identified as not cleaned up. This release presented a potential for crude oil-contaminated soil to be encountered in the north right-of-way during construction.

- Northern Truck Line - WPC documented in an interview with Mr. Vestal that USTs used to store diesel fuel had been removed from the property east of 20th Ave. East, and north of Highway 1804 in the late 1980s. He also informed WPC that soil excavated from an old pond at the Flying J refinery had been apparently cleared by the NDDH for use as fill. He reported that this fill was placed at the northeast corner of the intersection of Highway 1804 and 20th Ave. East to fill a wetland. The last remnant of that wetland was delineated by WPC on the south side of the lift station on the east side of 20th Ave. East. Upon further review, WPC believes the regulatory research from Section 3.2.2.a appears to demonstrate a tie-in to the diesel fuel seep, first covered in Item 2 of Section 7.1 above. Mr. Vestal mentioned a Doc Balsa (sp?) had once owned a Northern Truck Lines to the northeast of the intersection of Highway 1804 and 20th Ave. East. Section 3.2.2.a had a listing for **Balsam, Inc. (Northern Tank Line)**, which documented "Northern **Tank** Line - north of Flying J Refinery and east of Little Muddy River. Contaminated soils were encountered during an underground storage tank (UST) removal. Removal of contaminated soil was completed. The NDDH Groundwater Quality Department considered this site cleaned up." And as stated in Section 3.2.2.a, WPC believes this was the same location that Mr. Vestal described to WPC in Section 5.2.20.

However, Mr. Vestal referred to this as “Northern Truck Line”, and WPC could have misheard his reference to Mr. Balsa. Mr. Vestal did mention Mr. Balsa was from Miles City, Montana. An internet search found a “Northern Tank Line” with a registered agent as E. A. Balsam, and the firm was no longer in business. From this, WPC now infers that this listing - Northern Tank Line - was located at the intersection of 20th Ave. East and Highway 1804, and was the “Northern Truck Line” Mr. Vestal refers to in Section 5.2.20. The NDDH listing presented above, did not provide an address or location that could be definitively identified on a map. WPC believes these two (2) listings are one and the same, and could represent the most likely source of the diesel that seeped a “couple of years ago” from the north embankment into the seep, which the USACE had cleaned up. There may still be residual contamination under the former UST location where Northern Tank Line had been, and impacts may have traveled to the west where this impact may have surfaced at the “seep” on the USACE lands.

*Phase I Environmental Site Assessment, Highway 1804 Site Corridor (NDDOT Project No. 7-804(055)034), from CO RD 42 to Tempt NE TRR, Williston, North Dakota. Prepared by Western Plains Consulting, Inc., March 2016, Project 20891.*

## B.3. Physical Setting

### B.3.a. Topography

According to the United States Geological Survey (USGS) 7.5-minute topographic map series, Williston East, North Dakota quadrangle, the Site is located at an elevation of approximately 1,870 feet above mean sea level (MSL).

### B.3.b. Geology

The Williston Basin in central North Dakota and Eastern Montana is a plain of igneous and metamorphic rocks with numerous residual hills. By the end of the Mesozoic time period, the historical seas that deposited sand and clay from rivers flowing from the north and northeast retreated from the Williston Basin, and continental sediments began to be deposited in the region (Hainer, 1956). The uppermost bedrock unit of the area includes the Paleocene Cannonball Formation. The Cannonball Formation consists of interlayered olive-brown sand, shale, and sandstone which were deposited from marine shoreline and offshore sediment in depths up to 120 meters (Clayton, 1980). Surface geology includes Holocene river sediment, which includes both overbank and channel sediment. The overbank sediment consists of dark, obscurely bedded clay and silt while the channel sediment is overlying cross-bedded sand up to ten meters on flood plains of modern streams (Clayton, 1980).

### B.3.c. Hydrogeology

Based on water level data collected from the installed monitoring wells, groundwater at the Site is measured between 5 and 12 feet from the surface, at an elevation ranging from approximately 1,860 to 1,864 feet above MSL. Previous groundwater monitoring data collected for the Flying J Refinery property indicated that groundwater flow was towards the Little Muddy River in the southwest direction (WPC Phase I ESA 2016). The groundwater data collected on March 31, 2016 and presented in Figure 3, from the monitoring wells installed during this Phase II ESA assessment, is consistent with the groundwater flow is in the southwest direction.

## C. Scope of Services

The following tasks were conducted at the Site as part of this Phase II Environmental Site Assessment:

- Cleared public utilities with North Dakota One Call a minimum 48 hours before beginning the investigation.
- Advanced ten soil borings at the Site within the potentially contaminated areas identified in our previous Phase II Environmental Site Assessment.
- Collected two soil samples from each boring. One soil sample was collected from the interval most likely to exhibit impacts, and the second from the lower third of the soil boring.
- Following the completion of the soil borings, installed a one inch piezometer in each bore hole to allow measurement of the groundwater potentiometric surface at each location.
- Sampled groundwater from each piezometer to determine the extent of potential impacts in the surrounding area. Samples were submitted for laboratory analysis of GRO, DRO, and VOCs.
- Walked the site of the 200-barrel crude oil spill in Section 21, and evaluate the surface for residual evidence of the spill.
- Slug test newly installed wells to determine hydraulic conductivity of the subsurface.
- Evaluated the data and prepared this report

## C.1. Deviations from Proposal

Based on the observations made in the field, the majority of the borings were advanced deeper to better characterize the extent of soil contamination at the base of the proposed utility reconstruction and ensure the installed wells would intersect the groundwater surface.

During groundwater sampling activities, well SB-20 was dry, while wells SB-11 and SB-17 yielded insufficient water volume to complete all of the proposed analyses. As such, no groundwater sample was collected for well SB-20. Additionally, analysis of groundwater samples from wells SB-11 and SB-17 were prioritized for VOCs, as these results would be more critical in assessing any potential exposure for construction workers.

A soil boring and soil sample collection was intially planned at the site of the 200-barrel crude oil spill. However the field inspection did not identify any areas of stained soil or stress vegetation. Additionally, the site is on a steep slope, which drains west for about one quarter mile to a residential approach and culvert. A shovel was used to explore about 6 inches into the subsurface at the approximate site of the spill and at the culvert inlet. No evidence of petroleum contamination was observed at either location. Based on the extent of area over which a spill would likely have spread and the lack of any obvious indication of contamination, no boring or sampling was conducted at this location.

Only wells SB-11, SB-13, and SB-18 were slug tested. The remaining wells lacked sufficent water column height to fully submerge the pressure transducer and the bailer without interfering with each other.

No other deviations from the proposed scope of services were made during this investigation.

# D. Investigation Methods and Procedures

The fieldwork relating to the investigation was conducted on Tuesday through Thursday, March 15 to 17, 2016.

The locations and ground surface elevations of soil borings were surveyed by DOWL. Investigation locations are shown on Figure 2.

Prior to beginning the field investigation, public utilities were cleared through North Dakota One Call.

Ten push probe soil borings (designated SB-11 through SB-20) were advanced at the Site. The soil borings were advanced as follows:

- Soil borings SB-11 through SB-15 were advanced to a depth of approximately 15 feet below ground surface (bgs).
- Soil boring SB-16 was advanced to a depth of approximately 10 feet bgs
- Soil boring SB-17 was advanced to a depth of approximately 8 feet bgs
- Soil boring SB-18 and SB-19 were advanced to a depth of approximately 15 feet bgs
- Soil boring SB-20 was advanced to a depth of approximately 10 feet bgs

Soil Borings SB-11 through SB-15 were advanced on the north side of Highway 1804, between Highway 1804 Project Stations 16702+70 through 16707+20, and spaced approximately 140 feet apart. Soil borings SB-16 through SB-20 were advanced on the south side of Highway 1804, between Stations 16702+80 through 16706+80, and were spaced approximately 140 feet apart. Horizontal adjustment of borings was limited due to the high number of buried utilities.

Standard operating procedures (SOPs) used during the investigation are provided in Appendix A.

## D.1. Soil Evaluation

### D.1.a. Soil borings

We subcontracted Range Environmental Drilling of Hibbing, Minnesota to advance 10 soil borings, designated as SB-11 through SB-20 at the Site to depths ranging from 8-15 feet bgs. In part, borings were advanced as a result of elevated GRO detected from previous site investigations above the NDDH regulatory limits within the area of the impacted soil identified near soil boring SB-07.

Soil borings SB-11 through SB-20 were completed with a hydraulically-driven push-probe sampling rig. To collect the soil samples from the borings, a disposable thin-walled acetate liner was placed inside of a 5-foot long sampling tool. The borehole was then advanced using a dual-tube system, which allows for the inner sampling tool to be pushed through a larger outer-diameter rod for a total penetration depth of up to 5 feet. After advancing the tooling, the sampler was removed from the borehole, but the outer rod remained, keeping the borehole open, and the soil sample was retrieved from the acetate liner for field screening and classification. The process was then repeated to the termination depths of the borings.

Prior to arrival onsite, the drill rig and sampling equipment were cleaned with a high pressure, hot water sprayer. Between sampling locations, non-dedicated sampling equipment was cleaned with a soap and water scrub followed by a clean water rinse.

Upon completion, piezometers were installed in each borehole to evaluate groundwater flow direction and collect samples for laboratory analysis.

### D.1.b. Soil Classification and Monitoring

The soils encountered in the soil borings were visually and manually classified in the field by an environmental technician using ASTM D 2487 "Unified Soils Classification System" and ASTM D 2488 "Recommended Practice for Visual and Manual Description of Soils."

Soil samples retrieved were examined by an environmental technician for unusual staining, odors, and other apparent signs of contamination. In addition, the soil samples were screened for the presence of organic vapors using a PID. The PID was equipped with a 10.6-electron-volt lamp and calibrated to an isobutylene standard. The PID was used to perform a headspace method of field-analyses.

### D.1.c. Soil Chemical Analyses

Selected soil samples were collected from each soil boring for chemical analyses. In general, two depth-stratified samples were collected from each of the push-probe soil borings. Samples from the push-probe borings were vertically stratified. If indications of contamination were observed in the field, the samples for chemical analyses were collected from that interval. If no indications of contamination were observed, the soil samples were collected from the depth most likely to be impacted based on the potential contaminant source. A second sample was collected from the lower third of each soil boring.

Samples were analyzed for a combination of the following parameters:

- VOCs using EPA Method 8260
- Total Volatile Petroleum Hydrocarbons (TVPH)/GRO using EPA Method 8260
- Total Extractable Petroleum Hydrocarbons (TEPH)/DRO and MORO using the EPA Method 8015M

## D.2. Groundwater Evaluation

Piezometer wells were installed to evaluate groundwater conditions at the Site. During the Phase II ESA, ten wells, SB-11 through SB-20, were installed so that groundwater flow direction could be evaluated. A groundwater contour map is presented in Figure 3

### D.2.a. Groundwater Piezometers

After the soil borings were advanced, piezometers were constructed at each location using 1-inch-diameter PVC riser and one or two 5-foot-long, 10-slot screens. After the piezometer materials were centered inside of the borehole, a sand pack was installed in the annulus space.

Bentonite chips were installed on top of the sand pack and hydrated. A two inch steel protective top was installed approximately 18 inches above the ground surface, plugged and secured. Following installation, the elevation of the top of riser was surveyed to the nearest 0.01 foot, along with the ground surface to the nearest 0.1 foot. Survey and construction information are summarized on Table 1.

The piezometers were allowed to equilibrate for at least 24 hours before water level data and analytical samples were collected. Prior to sampling, water levels were collected at each temporary well location. The piezometers were purged until turbidity in the groundwater had decreased sufficiently to provide a viable sample. If the piezometer was purged dry, it was allowed to recharge prior to sampling.

The newly installed piezometers were purged and sampled on March 17, 2016. The piezometers were sampled using a new length of polyethylene tubing equipped with a check ball. The groundwater samples collected, were placed directly into laboratory supplied containers, preserved appropriately, and submitted to the laboratory for chemical analysis. Wells SB-11 and SB-17 were purged dry during the March 17th field activities. After allowing them to recharge for more than two hours, the sample volume recovered was only sufficent to fill three of the six, 40-millilter vials.

Purge water removed from the wells was containerized and stored onsite prior to off-Site disposal at Clean Harbors in Sawyer, North Dakota.

#### D.2.b. Groundwater Chemical Analyses

The groundwater samples collected from the permanent and temporary wells were analyzed for the following parameters:

- VOCs using EPA Method 8260
- TVPH/GRO using EPA Method 8260
- TEPH/DRO and MORO using the EPA Method 8015M

# E. Investigation Results

## E.1. Geologic Conditions

Soil boring logs, with descriptions of the various soil strata encountered during the soil boring operations, and well construction information are contained in Appendix B. The depths noting changes between the soil types are approximate. The actual changes may be transitional, and the transition depths are likely to be horizontally variable. Cross sections of the north and south sides of Highway 1804 are shown in Figures 4 and 5.

In general, the subsurface geology is comprised of interbedded clays, silts, sands and gravels; common in alluvial deposits. Site soils encountered were predominantly interbedded sandy lean clays (CL) or sandy silt (ML). Silty sands (SM), along with coarser sands (SP) and gravels, underlie the silts and lean clays at SB-12 and to the east. Trace gravels were recognized at various depth intervals in most of the borings. A fat clay layer was observed within the termination of the boring section at SB-11, SB-12, SB-13, SB-18, and SB-19.

The subsurface investigation in the area of SB-17 was limited due to encountering refusal at 8 feet bgs. Concrete chips were observed in the base of the probe tip, indicating either large rubble or a structure in this area. Offsetting the probe 2 feet to the east, and again 2 feet to the west, of the initial boring resulted in refusal at similar depths. Further offsetting of the probe location was not feasible due to the extent of subsurface utilities.

## E.2. Field Screening

Soil samples collected from the soil borings were screened at increments of 2.5 feet, for the presence of volatile organic vapors using a PID. No PID readings above background level of 10.0 parts per million (ppm) were detected within soil borings SB-11, SB-12, SB-16, SB-17, or SB-20. Elevated PID readings were measured at soil borings SB-13, SB-14, SB-15, SB-18, and SB-19. A summary of the soil screening results for the soil samples is provided in Table 2. Visual color changes and olfactory observations were consistent with the PID readings and are presented in the boring logs.

Elevated PID readings were detected at soil borings SB-13 and SB-14 from 7.5 feet to 15 feet bgs, as well as at the 13.5 to 15-foot interval of SB-15. PID readings in this interval ranged from 543.7 to 1002 ppm at SB-13, 74.8 to 967.4 ppm at SB-14, and 91.0 ppm at SB-15. Elevated PID readings were also detected at soil borings SB-18 and SB-19 from 10 to 15 feet. PID readings in this interval ranged from 21.4 to 327.5 ppm at SB-18 and 29.7 to 551.7 ppm at SB-19.

PID readings between SB-07 and SB-18 appear to be substantially different despite be located in close proximity to each other. Weather does not appear to have been a factor in this discrepancy, as it was described as approximately 32 degrees Fahrenheit and windy during this addendum investigation, when peak PID readings were observed to be substantially higher. While these peak readings in SB-18 are substantially higher, the readings are from a deeper soil interval. Furthermore, a comparison of the boring log for SB-07 with that of SB-18, for the same depth interval, indicates similar descriptions and PID readings.

## E.3. Soil Analytical Testing Results

A summary of soil analytical results are discussed below and on Figure 6. A detailed summary of the soil analytical results is provided in Table 3a for shallow samples and Table 3b for the deep samples.

The results of the laboratory analysis indicated that:

- Elevated soil GRO concentrations were measured at soil borings SB-13(10) and SB-14(14) at concentrations of 2,700 and 5,300 milligrams per kilogram (mg/kg) respectively. Lower, but still elevated GRO concentrations were detected at borings SB-18(12) and SB-19(14) at 730 and 810 mg/kg, respectively. Shallow GRO impacts were only detected at boring SB-18 at a concentration of 11 mg/kg. GRO was not detected above the method detection limit (MDL) for the remaining soil borings.

- As with GRO, and consistent with the previous investigation, DRO was detected above the NDDH regulatory limits, at depths of 10 to 14 feet bgs at SB-13, SB-14, SB-18, and SB-19. This is consistent with impacted soil identified at 8 feet bgs at soil boring SB-07. The highest DRO concentrations were detected in SB-13(10) and SB-14(14), located on the north side of the road, at 6,100 mg/kg, and 3,200 mg/kg, respectively. Lower, but still elevated concentrations were detected at SB-18 (12 feet bgs) and SB-19 (14 feet bgs) at 580 and 430 mg/kg, respectively. Low levels, between 2.2 and 48 mg/kg, were detected in the deep samples from SB-15, SB-17, and SB-20. Shallow DRO impacts were only detected at borings SB-17, SB-18, and SB-19 at concentrations less than 50 mg/kg.

- MORO accompanied the high DRO and GRO concentrations. The highest MORO impacts were detected at soil borings SB-13(10) and SB-14(14) at concentrations of 330 and 590 mg/kg, respectively, which exceeded the NDDH regulatory limit. Low concentrations, ranging from 1.9 to 68 mg/kg were widely detected across the boring locations and sample depths. Only soil samples from SB-11(7), SB-12(11), and SB-15(9) showed no detected MORO.

- Benzene was detected at SB-18 and SB-19, located west of the impacted soils previously identified in SB-07. Benzene was detected at soil boring SB-19(14) at a concentration of 4,900 micrograms per kilogram (ug/kg). Benzene was also detected in the shallow and deep samples at SB-18 at concentrations of 190 and 310 ug/kg, respectively.

- Various petroleum derived VOCs were detected within the soil samples that contained elevated concentrations of DRO, GRO, and MORO at soil borings SB-13(10), SB-14(14), SB-

18(8), SB-18(12), and SB-19(14). The NDDH has no established regulatory limits associated with any of these compounds.

- Petroleum derived compounds, such as idomethane, were consistently detected across the borings at concentrations ranging from 24 ug/kg at SB-12(11) and 110 ug/kg at SB-17(8).

  Additionally, bromomethane and chloromethane were detected at SB-11(11) at a concentration of 16 ug/kg. As these compounds appear to be more widely distributed in the subsurface soils, it is unclear if it is associated with the former refinery or another source. The NDDH has no established regulatory limits associated with these compounds.

The complete laboratory report with chain of custody forms is attached in Appendix C.

## E.4. Groundwater Analytical Testing Results

A summary of the analytical results for the groundwater samples is presented on Figure 7 and provided in Table 4.

The results of the laboratory analysis indicated that:

- GRO was detected above state regulatory limit of 500 micrograms per liter (ug/L) of total petroleum hydrocarbons (TPH) from groundwater samples collected at SB-13, SB-14, SB-15, SB-18 and SB-19, with concentrations ranging from 2,100 ug/L at SB-15 to 38,000 ug/L at SB-13. DRO was detected above the state regulatory limit of 500 ug/L at the same five monitoring wells, with concentrations ranging from 6,600 ug/L at SB-19 to 2,800,000 ug/L at SB-13. Similarly, MORO concentrations at these wells ranged from 1,400 ug/L at SB-19 to 260,000 ug/L at SB-13, and exceeded this same standard.

- Benzene was detected at concentrations above the EPA Maximum Contaminant Level (MCL) of 5 ug/L at SB-19, SB-18, and SB-15, with concentrations of 4,900 ug/L, 650 ug/L, and 12 ug/L, respectively. This is also the NDDH regulatory limit. Benzene was also detected in SB-17 at 0.58 ug/L. While benzene was not detected at SB-13 or SB-14, the detection limit had to be adjusted to 30 ug/L due to laboratory sample dilution, prior to analysis.

- Ethylbenzene concentrations detected at SB-13, SB-14, SB-18, and SB-19 also exceeded the 700 ug/L MCL. Concentrations ranged from 780 ug/L at SB-19 to 1,300 ug/L at SB-18. Ethylbenzene was also detected at 170 ug/L at well SB-15; however, this is below the MCL.

- Elevated concentrations of various petroleum derived VOCs accompanied the groundwater samples with elevated DRO, GRO, benzene, and ethylbenzene. Low level concentrations

were detected throughout the remaining groundwater samples, with the exception of well SB-16. As naphthalene appears to be more widely distributed in the groundwater, it is unclear if these are associated with the former refinery, or another source. The NDDH has no established regulatory limits associated with these compounds.

The complete laboratory report with chain of custody forms is attached in Appendix C.

## E.5. Quality Assurance/Quality Control

Samples were placed in clean, laboratory supplied containers, preserved, labeled, and transported to ALS Environmental of Fort Collins, Colorado under refrigerated conditions using chain-of-custody procedures.

Analyses were performed using EPA or other recognized standard procedures. Data were reviewed prior to release, quality-control guidelines were generally met, and the data is considered usable.

The soil analytical report noted that the daily continuing calibration verification of the instrument on March 20, 2016, were high for several VOCs. This could cause the results for these compounds to potentially be reported higher than actual. As such, all positive detections for these compounds in the associated samples were flagged with a “J”, as estimated. Similarly, the continuing calibration verification for acetone was low for the results analyzed on March 26, 2016. As such, all positive results for acetone, in the associated samples, were flagged with a “J”, as estimated. The final dilution run for sample SB-14(14) was run outside of hold time. As such, the result for 1,2,4-Trimethylbenzene in this sample was also flagged as estimated.

The analytical results for groundwater noted acetone was detected in the method blank at 10 ug/L.
As acetone is a common laboratory contaminant, all positive detections of acetone, that were less than ten times the concentration detected in the method blank, were qualified as non-detect. Additionally, the detection limit used for the affected samples in this report was switched from the MDL to the higher practical quantitation limit (PQL).

Specific information on standard operating procedures, detection limits, and quality-control measures is available upon request.

## E.6. Comparisons to EPA Regional Screening Levels

As Highway reconstruction and underground utility replacement is planned for this area, concerns for worker safety were expressed. No risk-based standards were available for a construction worker scenario from either NDDH or EPA. Instead, soil concentrations of volatile compounds were compared to EPA's Regional Screening Levels (RSLs) for a resident or industrial worker exposure scenario. While these human health exposure risk scenarios represent a longer duration of exposure (25 to 30 years), they are used here as a guide post to determine if a more construction-specific risk assessment is warranted. The individual RSLs are presented in Tables 3a and 3b.

While none of the concentrations in shallow soil samples (between 3 and 9 feet bgs) exceeded RSLs, deep samples from borings SB-13, SB-14, SB-18 and SB-19 contained levels of 1,2,4-trimethylbenzene; 1,2-dichloropropane; benzene; ethylbenzene; or naphthalene in excess of the respective residential RSL. Additionally, the industrial RSL was exceeded for 1,2,4-trimethylbenzene at SB-13 (10) and SB-14 (14), and naphthalene at SB-13 (10). While the concentrations or 1,2,4-trimethylbenzene and benzene at SB-19 (14) did not exceed the industrial RSL, they were very near it.

Based on this comparison, additional consideration of the potential exposure to future construction workers appears to be warranted.

## E.7. Hydraulic Conductivity Testing Results

The determination of groundwater hydraulic conductivities was necessary to determine the rate of groundwater flow within the proposed project area. Hydraulic conductivity tests were conducted at monitoring wells SB-11 completed within clay materials, and SB-13 and SB-18 completed in sand/gravel materials. The tests were conducted as slug tests, removing a slug of water from each well and monitoring the groundwater recharge to the well. The tests were conducted in such a way to be processed using equations developed by Bouwer and Rice (1976) to determine hydraulic conductivity values for each well. Hydraulic conductivity is the measure of groundwater velocity, normalized for a flow gradient of 1.0.

Hydraulic conductivity values for the sand/gravel materials range between 9.67 ft/day at monitoring well SB-18 and 55.7 ft/day at monitoring well SB-13. The hydraulic conductivity of 0.318 ft/day was determined from monitoring well SB-11, completed within clay materials. A summary of groundwater hydraulic conductivities are provided below. Test data is attached.

| Well | Hydraulic Conductivity (ft/day) | Hydraulic Conductivity (gal per day/ft$^2$) | Notes |
|---|---|---|---|
| SB-11 | 0.042 | 0.318 | Fat Clay |
| SB-13 | 55.7 | 417 | Sand/Gravel |
| SB-18 | 9.67 | 72.4 | Sand/Gravel |

Based on groundwater elevation data collected on March 31, 2016, groundwater measurements showed depth to water ranging between approximately 5 and 12 feet below grade. Based on groundwater elevation data from these wells, the lateral groundwater flow gradient of the unconsolidated materials is approximately 0.0065 ft/ft, flowing towards the east.

### E.7.a. Groundwater Flow Volume

The volumetric rate of groundwater discharge through a cross section is computed from Darcy's Law as:

$$Q=KiA$$

Where:

Q = Volumetric Groundwater Flow Rate (gallons per day)
K = Hydraulic Conductivity (gallons per day per ft2)
i = Hydraulic Gradient (ft/ft)
A = Cross Section Area of Flow to Excavation (ft2). For the purpose of this evaluation, A is defined as the perimeter of an assumed 6foot wide excavation extending a length of 100 feet extending 2 feet below the water table combined with the base area (6+6+100+100)x2 +(6x100) = 1,024 ft2

The groundwater volume contribution was determined by the product of the groundwater flow gradient (0.0065 ft/ft), maximum hydraulic conductivity (417 gal per day/ft2), and area (1,0246 ft2,) Based on this analysis, approximately 2,800 gallons of groundwater per day will be captured by the proposed 100-foot open per day excavation as a result of normal flow through the unconsolidated materials assuming the highest hydraulic conductivity determined.

## F. Conclusions

Based on the results of this addendum to the Phase II Environmental Site Assessment, soil and groundwater to the north and northwest of the former Flying J Refinery facility is impacted with

petroleum derived compounds, most likely related to impacts associated with an ongoing clean-up investigation of the former Flying J Refinery.

Soil impacts were identified on both sides of Highway 1804, and generally below 8 feet bgs. The soil borings showing significant impacts are located between stations 16705+00 and 16703+00, associated with the NDDOT Highway 1804 Reconstruction Project (NDDOT Project No. 7-804(055)034). Also within this interval, elevated PID readings were measured between 8.5 and 15 feet bgs (1864.6 feet and 1854.4 feet above MSL). Laboratory analytical data from soil samples collected at the boring locations showed elevated DRO, GRO, and MORO above NDDH regulatory limits.

Additionally, the levels of 1,2,4-trimethylbenzene; 1,2-dichloropropane; benzene; ethylbenzene; and naphthalene in the soil from this area could present a health risk to construction workers that come in contact with the impacted zone. Based on the Preliminary Drainage Plan and Profile for Station 16702+80 and 16707+20, received from DOWL, Inc. (dated March 15, 2016), impacted soils will likely be encountered during the excavation for Man Hole 64 and the associated inlets, catch basins, conduit, and trench plug located at station 16704+45. When encountered or removed, impacted soils will require special handling and disposal in accordance with NDDH Handling Petroleum Contaminated Soils guidance document. Additionally, it is recommended that workers that could be exposed to this impacted soil, either through inhalation of vapors or direct contact, should be certified to work under Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations.

Impacts to groundwater were identified at monitoring wells SB-13, SB-14, SB-15, SB-18, and SB-19. Laboratory analytical data indicated DRO, GRO, and benzene impacts above the NDDH regulatory limits for the above mentioned wells. Groundwater elevation data indicated groundwater was located between 1861.66 and 1864.39 feet above MSL. Based on the Preliminary Drainage Plan and Profile for Station 16702+80 and 16707+20, received from DOWL, Inc. (dated March 15, 2016), impacted groundwater will likely be encountered during the excavation for Man Hole 64 and the associated inlets, catch basins, conduit, and trench plug located at station 16704+45. Impacted groundwater was not observed above state regulatory limits at SB-11, SB-12, SB-16, and SB-17. A clay layer was observed within the associated soil borings between 11 and 15 feet bgs, which may be limiting the horizontal migration of groundwater impacts to the southwest. Excavation of the trench to install the proposed storm sewer could temporarily or permanently eliminate this impediment of contamination migration. If groundwater is encountered during the road reconstruction excavation, containerization and disposal of any dewatered fluids may be required. Additionally, any stormwater that contacts impacted soil or groundwater will need to be similarly managed to avoid offsite discharge in accordance with the North Dakota Pollutant Discharge Elimination System (NDPDES) Permit ND07-0000.

## G. Recommendations

Based on the results of this assessment, we provide the following recommendations:

- We recommend the completion of a Soil Management/Construction Contingency Plan to provide expectations and procedures for the management of impacted soils that will be encountered during Highway 1804 reconstruction activities.

- We recommend that a work plan be prepared to provide procedures for the management of potential dewatering of impacted groundwater that may be encountered during Highway 1804 reconstruction activities.

- We recommend preparing a modified Health and Safety Plan (HASP) to limit worker exposure during trenching activities and dewatering. Depending on the method of construction, this may require portions of the utility work to be done by contractors certified to operate under OSHA's HAZWOPER regulations.

## H. Assessment Limitations

The analyses and conclusions submitted in this report are based on our field observations and the results of laboratory chemical analyses of soil samples and groundwater samples collected from the soil borings completed for this project.

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

# Figures

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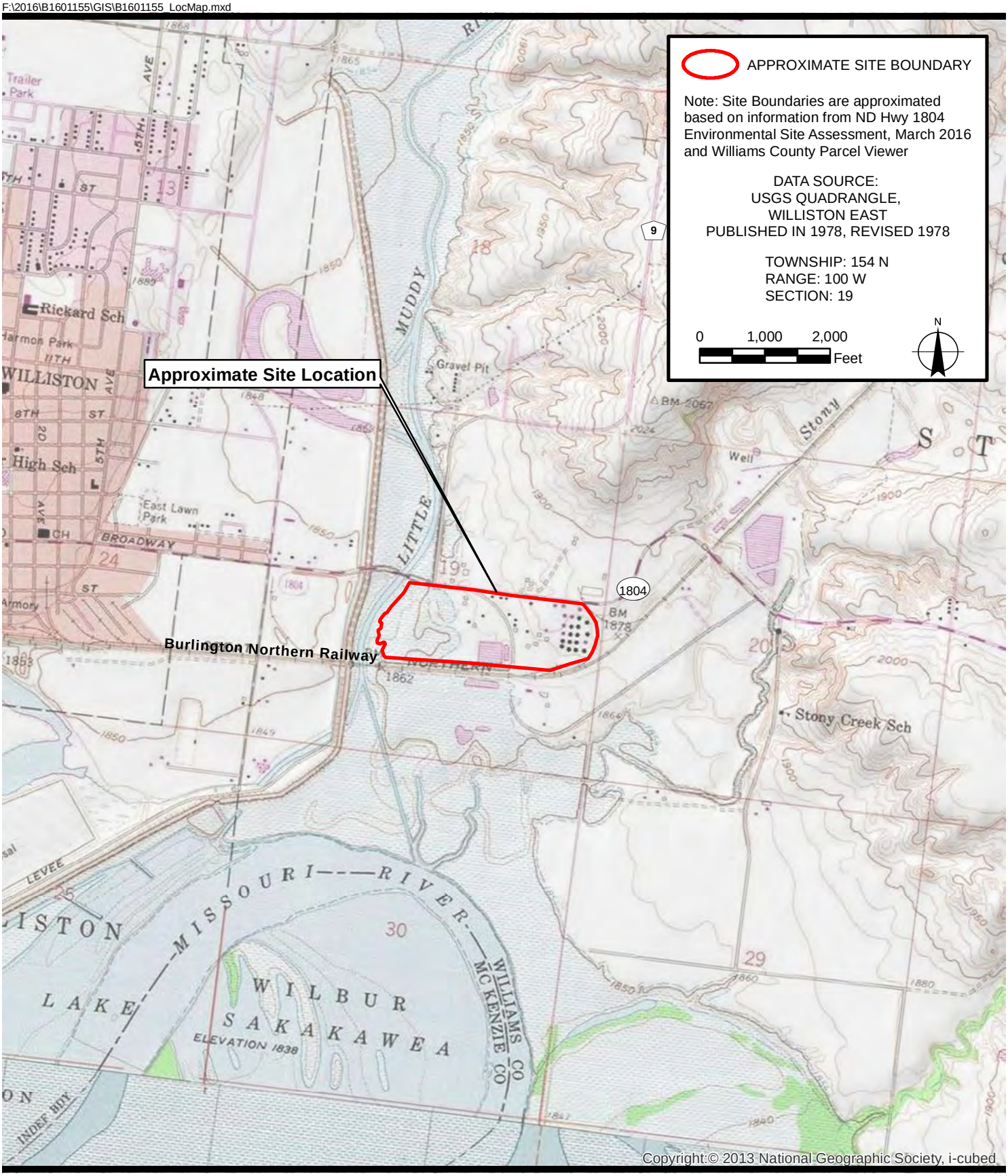


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Fig. 1

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| Drawn By: | CMF |
| Date Drawn: | 02/23/2016 |
| Checked By: | JK & CL |
| Last Modified: | 4/29/16 |

# SITE LOCATION MAP

ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH. (952) 995-2000
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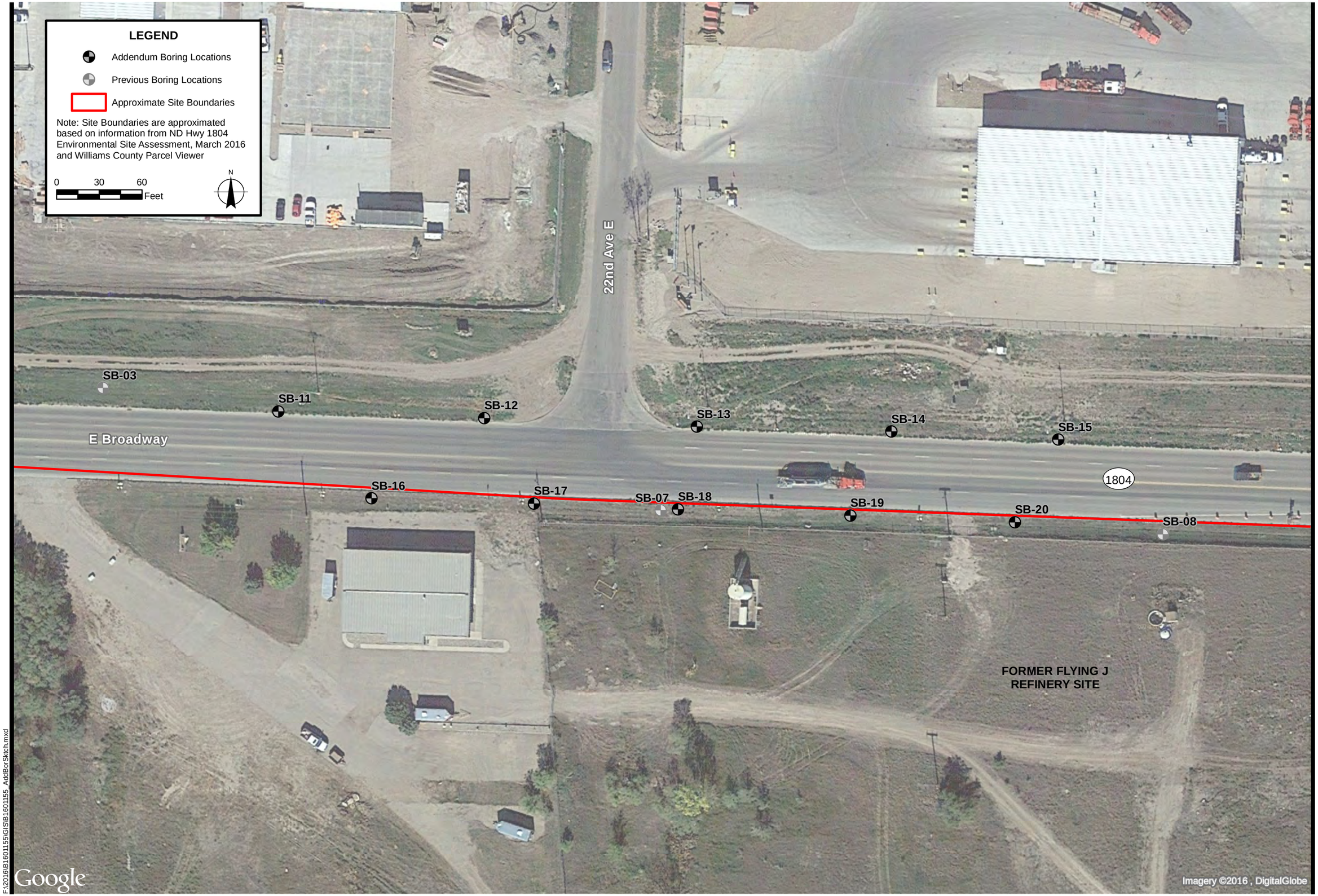


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# BORING LOCATION SKETCH

ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

| | |
|---|---|
| Project No: | B1601155 |
| Drawing No. | B1601155_AddBorSktch |
| Scale: | 1 in = 60 ft |
| Drawn By: | CMF |
| Date Drawn: | 02/23/2016 |
| Checked By: | JK & CL |
| Last Modified: | 4/29/16 |
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| Fig. | 2 |

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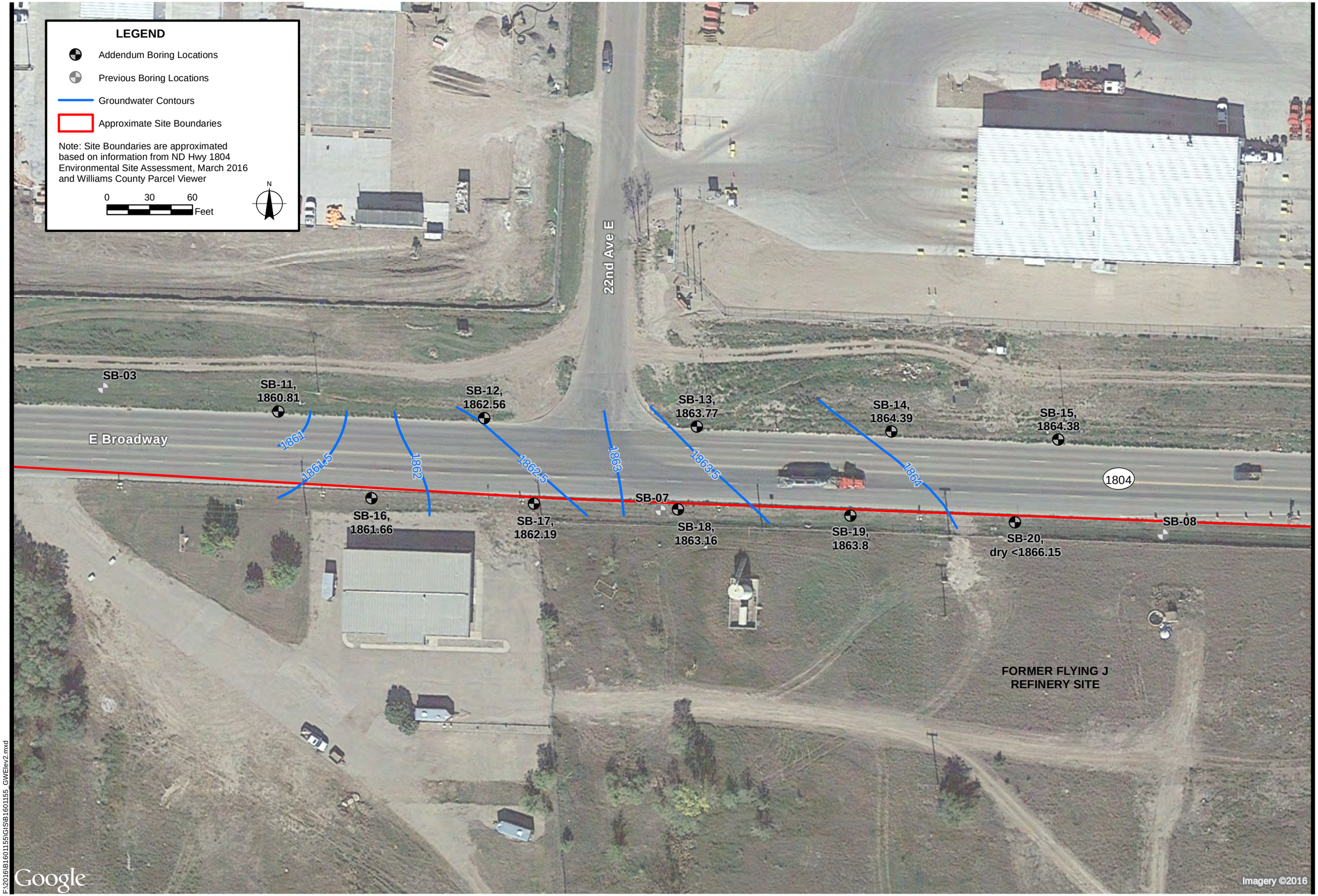


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# GROUNDWATER CONTOUR MAP

ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

| | |
|---|---|
| Project No: | B1601155 |
| Drawing No. | B1601155_GWElev2 |
| Scale: | 1 in = 60 ft |
| Drawn By: | CMF |
| Date Drawn: | 02/23/2016 |
| Checked By: | JK & CL |
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| Fig. | 3 |

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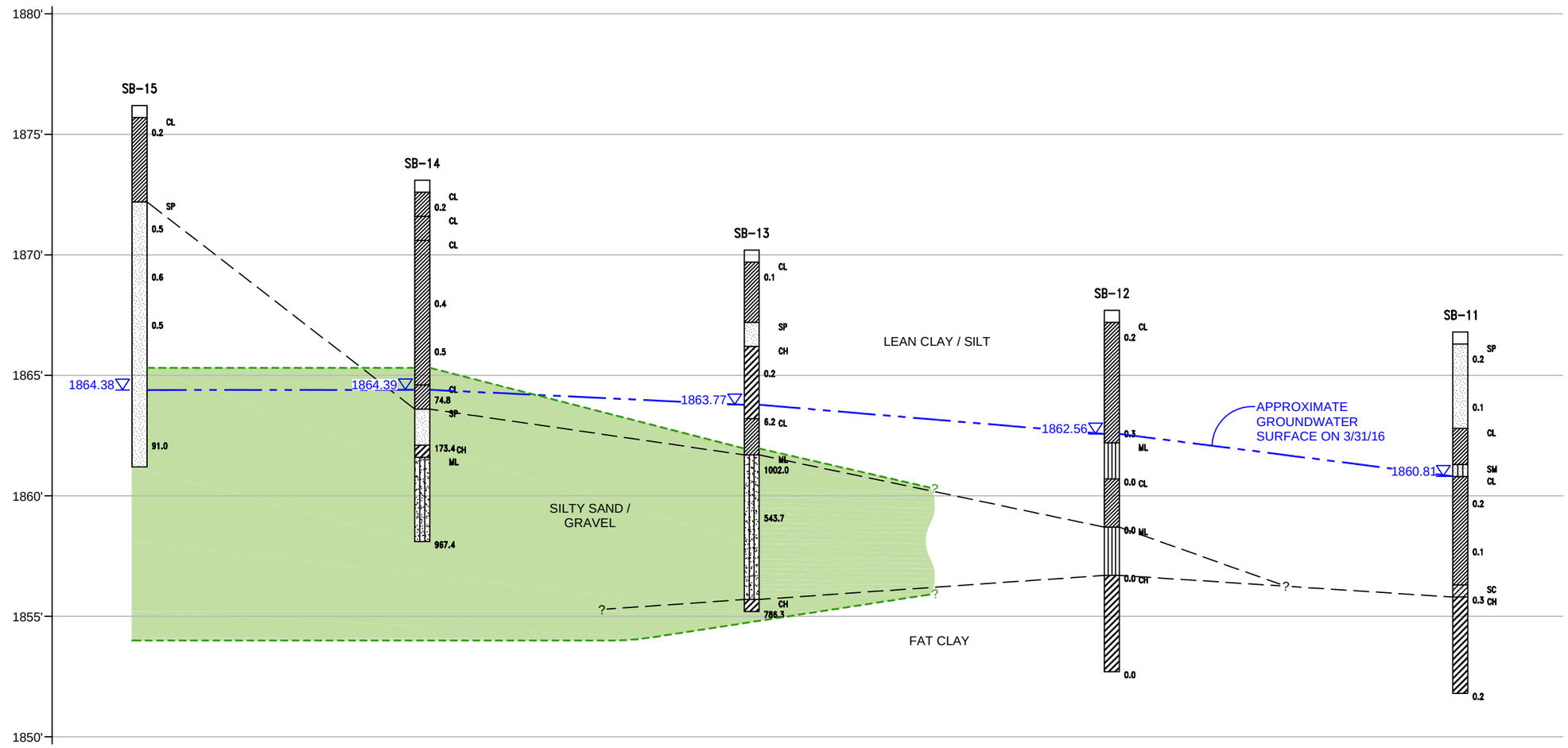


MAJOR SOIL TYPE CHANGES

APPROXIMATE GROUNDWATER SURFACE ON 3/31/16

EXTENT OF OBSERVED CONTAMINATION

NOTE: NUMBERS ADJACENT TO EACH BORING REPRESENT OBSERVED PID READINGS IN ppm

25' 0 50'

HORIZONTAL SCALE: 1" = 50'

2.5' 0 5'

VERTICAL SCALE: 1" = 5'

VERTICAL EXAGGERATION: 10x

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NORTH SIDE CROSS SECTION SB-15 TO SB-11
ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

| | |
|---|---|
| Project No: | B1603644 |
| Drawing No: | B1601155A |
| Scale: | AS SHOWN |
| Drawn By: | BJB |
| Date Drawn: | 4/8/16 |
| Checked By: | JK |
| Last Modified: | 4/13/16 |
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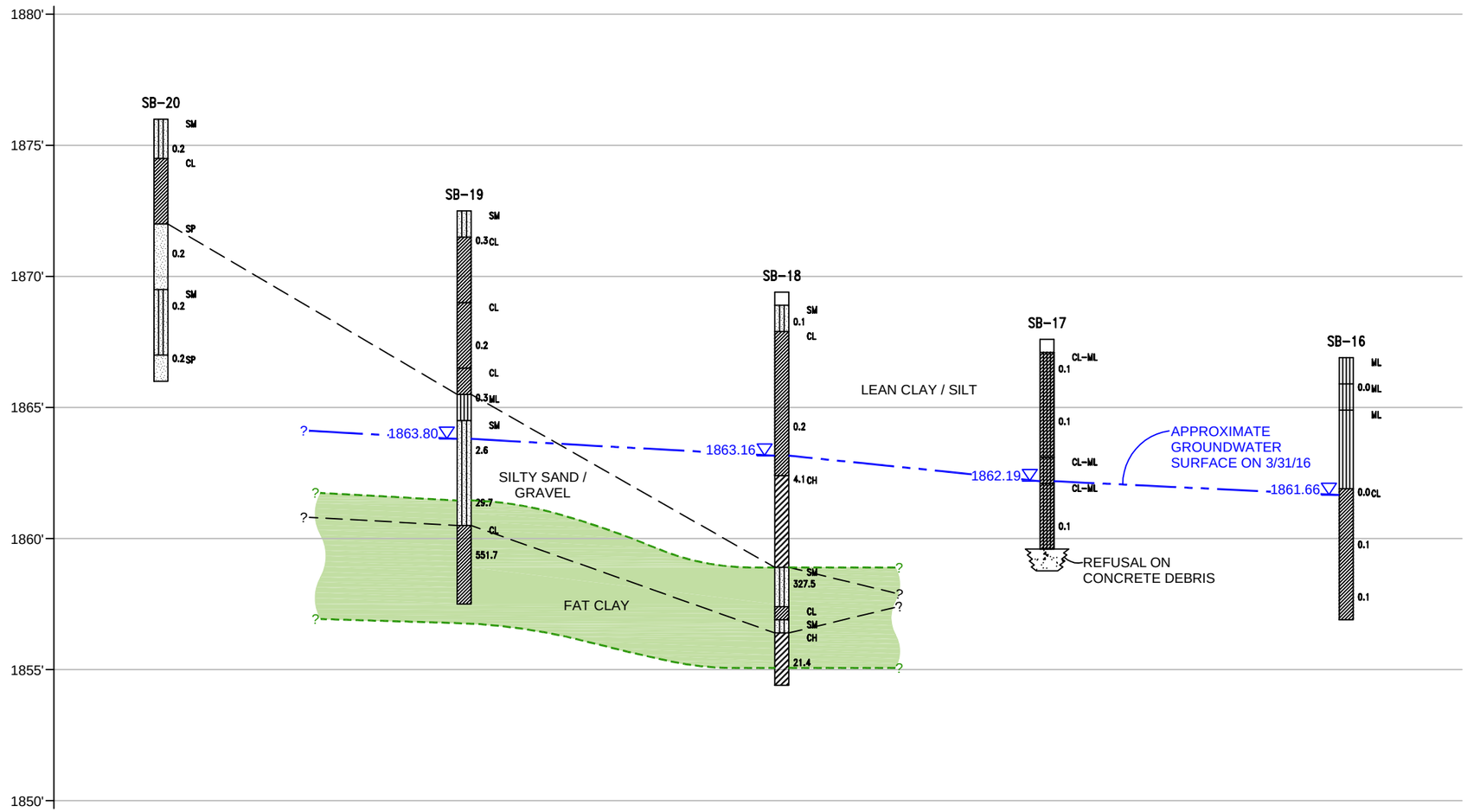


MAJOR SOIL TYPE CHANGES

APPROXIMATE GROUNDWATER SURFACE ON 3/31/16

EXTENT OF OBSERVED CONTAMINATION

NOTE: NUMBERS ADJACENT TO EACH BORING REPRESENT OBSERVED PID READINGS IN ppm

25' 0 50'

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2.5' 0 5'

VERTICAL SCALE: 1" = 5'

VERTICAL EXAGGERATION: 10x

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SOUTH SIDE CROSS SECTION SB-20 TO SB-16
ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

| | |
|---|---|
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| Drawing No: | B1601155A |
| Scale: | AS SHOWN |
| Drawn By: | BJB |
| Date Drawn: | 4/8/16 |
| Checked By: | JK |
| Last Modified: | 4/28/16 |
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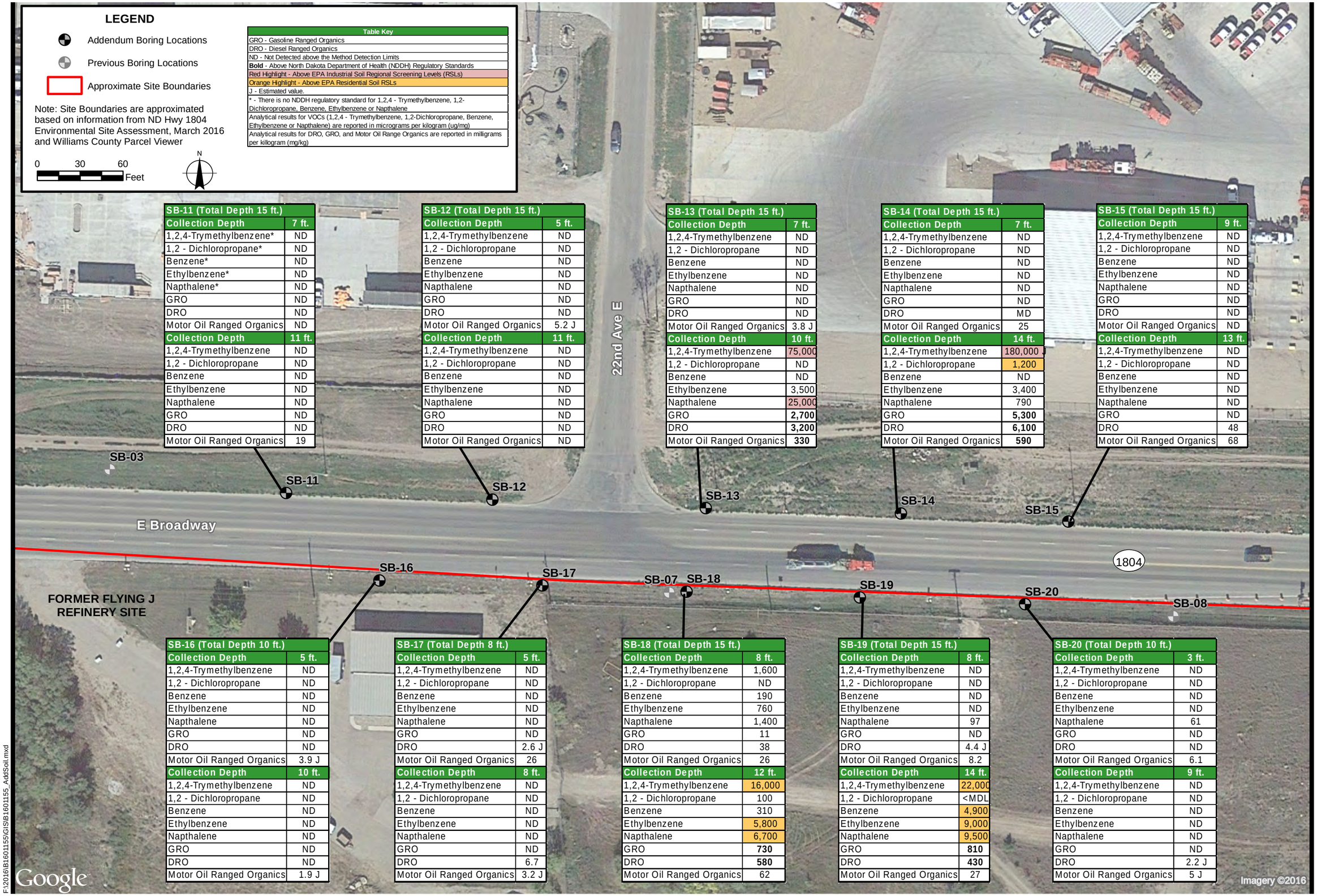


## LEGEND

- Addendum Boring Locations
- Previous Boring Locations
- Approximate Site Boundaries

Note: Site Boundaries are approximated based on information from ND Hwy 1804 Environmental Site Assessment, March 2016 and Williams County Parcel Viewer

0 30 60 Feet

N

| Table Key |
|---|
| GRO - Gasoline Ranged Organics |
| DRO - Diesel Ranged Organics |
| ND - Not Detected above the Method Detection Limits |
| **Bold** - Above North Dakota Department of Health (NDDH) Regulatory Standards |
| Red Highlight - Above EPA Industrial Soil Regional Screening Levels (RSLs) |
| Orange Highlight - Above EPA Residential Soil RSLs |
| J - Estimated value. |
| * - There is no NDDH regulatory standard for 1,2,4 - Trymethylbenzene, 1,2-Dichloropropane, Benzene, Ethylbenzene or Napthalene |
| Analytical results for VOCs (1,2,4 - Trymethylbenzene, 1,2-Dichloropropane, Benzene, Ethylbenzene or Napthalene) are reported in micrograms per kilogram (ug/mg) |
| Analytical results for DRO, GRO, and Motor Oil Range Organics are reported in milligrams per killogram (mg/kg) |

| SB-11 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **7 ft.** |
| 1,2,4-Trymethylbenzene* | ND |
| 1,2 - Dichloropropane* | ND |
| Benzene* | ND |
| Ethylbenzene* | ND |
| Napthalene* | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | ND |
| **Collection Depth** | **11 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | 19 |

| SB-12 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **5 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | 5.2 J |
| **Collection Depth** | **11 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | ND |

| SB-13 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **7 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | 3.8 J |
| **Collection Depth** | **10 ft.** |
| 1,2,4-Trymethylbenzene | 75,000 |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | 3,500 |
| Napthalene | 25,000 |
| GRO | **2,700** |
| DRO | **3,200** |
| Motor Oil Ranged Organics | **330** |

| SB-14 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **7 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | MD |
| Motor Oil Ranged Organics | 25 |
| **Collection Depth** | **14 ft.** |
| 1,2,4-Trymethylbenzene | 180,000 J |
| 1,2 - Dichloropropane | 1,200 |
| Benzene | ND |
| Ethylbenzene | 3,400 |
| Napthalene | 790 |
| GRO | **5,300** |
| DRO | **6,100** |
| Motor Oil Ranged Organics | **590** |

| SB-15 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **9 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | ND |
| **Collection Depth** | **13 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | 48 |
| Motor Oil Ranged Organics | 68 |

| SB-16 (Total Depth 10 ft.) | |
|---|---|
| **Collection Depth** | **5 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | 3.9 J |
| **Collection Depth** | **10 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | 1.9 J |

| SB-17 (Total Depth 8 ft.) | |
|---|---|
| **Collection Depth** | **5 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | 2.6 J |
| Motor Oil Ranged Organics | 26 |
| **Collection Depth** | **8 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | 6.7 |
| Motor Oil Ranged Organics | 3.2 J |

| SB-18 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **8 ft.** |
| 1,2,4-Trymethylbenzene | 1,600 |
| 1,2 - Dichloropropane | ND |
| Benzene | 190 |
| Ethylbenzene | 760 |
| Napthalene | 1,400 |
| GRO | 11 |
| DRO | 38 |
| Motor Oil Ranged Organics | 26 |
| **Collection Depth** | **12 ft.** |
| 1,2,4-Trymethylbenzene | 16,000 |
| 1,2 - Dichloropropane | 100 |
| Benzene | 310 |
| Ethylbenzene | 5,800 |
| Napthalene | 6,700 |
| GRO | **730** |
| DRO | **580** |
| Motor Oil Ranged Organics | 62 |

| SB-19 (Total Depth 15 ft.) | |
|---|---|
| **Collection Depth** | **8 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | 97 |
| GRO | ND |
| DRO | 4.4 J |
| Motor Oil Ranged Organics | 8.2 |
| **Collection Depth** | **14 ft.** |
| 1,2,4-Trymethylbenzene | 22,000 |
| 1,2 - Dichloropropane | <MDL |
| Benzene | 4,900 |
| Ethylbenzene | 9,000 |
| Napthalene | 9,500 |
| GRO | **810** |
| DRO | **430** |
| Motor Oil Ranged Organics | 27 |

| SB-20 (Total Depth 10 ft.) | |
|---|---|
| **Collection Depth** | **3 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | 61 |
| GRO | ND |
| DRO | ND |
| Motor Oil Ranged Organics | 6.1 |
| **Collection Depth** | **9 ft.** |
| 1,2,4-Trymethylbenzene | ND |
| 1,2 - Dichloropropane | ND |
| Benzene | ND |
| Ethylbenzene | ND |
| Napthalene | ND |
| GRO | ND |
| DRO | 2.2 J |
| Motor Oil Ranged Organics | 5 J |


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# SOIL ANALYTICAL RESULTS

ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

| | |
|---|---|
| Project No: | B1601155 |
| Drawing No. | B1601155_AddSoil |
| Scale: | 1 in = 60 ft |
| Drawn By: | CMF |
| Date Drawn: | 02/23/2016 |
| Checked By: | JK & CL |
| Last Modified: | 4/29/16 |
| Sheet: | 1 of 1 |
| Fig. | 6 |

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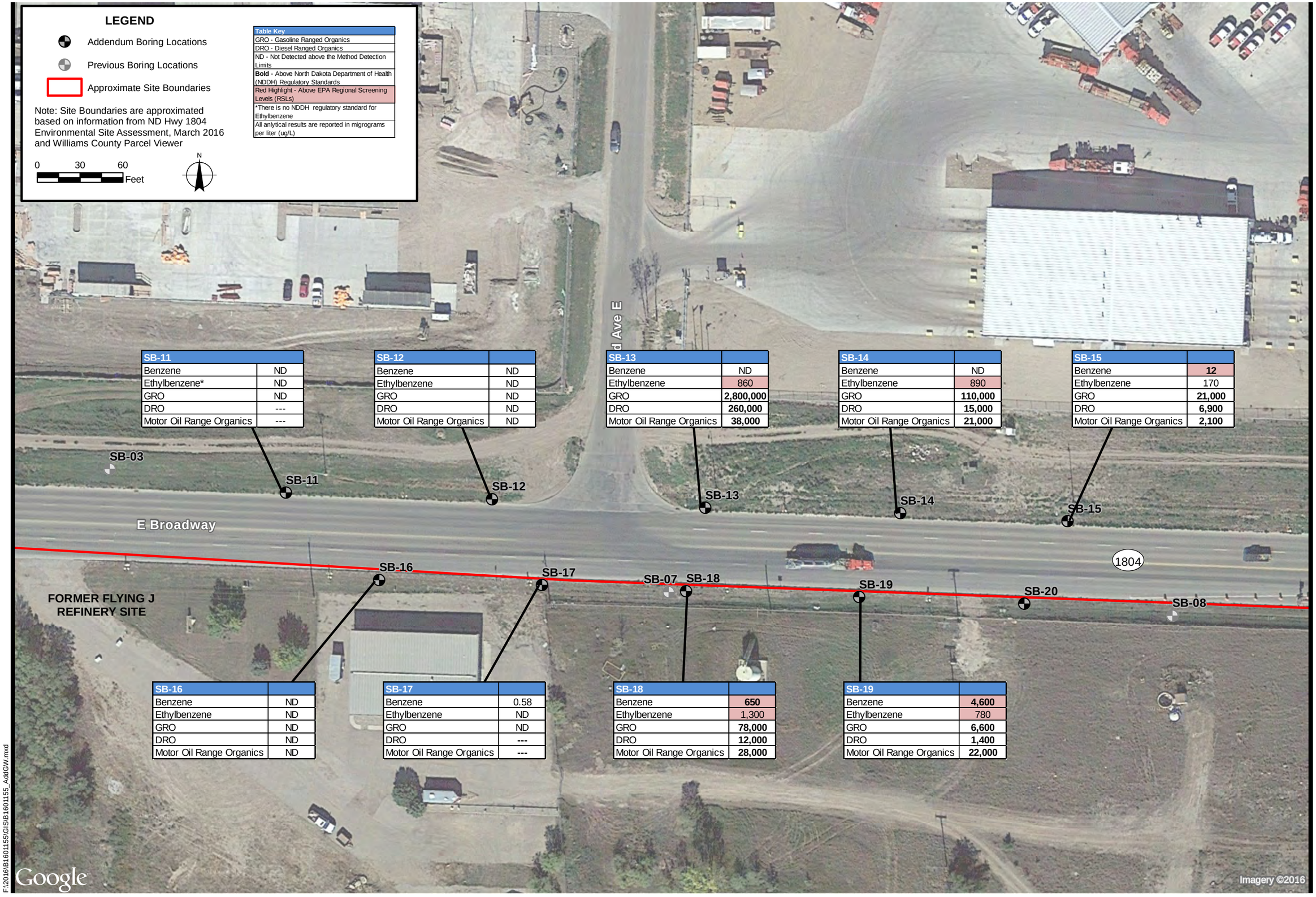


| SB-11 | |
|---|---|
| Benzene | ND |
| Ethylbenzene* | ND |
| GRO | ND |
| DRO | --- |
| Motor Oil Range Organics | --- |

| SB-12 | |
|---|---|
| Benzene | ND |
| Ethylbenzene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Range Organics | ND |

| SB-13 | |
|---|---|
| Benzene | ND |
| Ethylbenzene | 860 |
| GRO | **2,800,000** |
| DRO | **260,000** |
| Motor Oil Range Organics | **38,000** |

| SB-14 | |
|---|---|
| Benzene | ND |
| Ethylbenzene | 890 |
| GRO | **110,000** |
| DRO | **15,000** |
| Motor Oil Range Organics | **21,000** |

| SB-15 | |
|---|---|
| Benzene | **12** |
| Ethylbenzene | 170 |
| GRO | **21,000** |
| DRO | **6,900** |
| Motor Oil Range Organics | **2,100** |

| SB-16 | |
|---|---|
| Benzene | ND |
| Ethylbenzene | ND |
| GRO | ND |
| DRO | ND |
| Motor Oil Range Organics | ND |

| SB-17 | |
|---|---|
| Benzene | 0.58 |
| Ethylbenzene | ND |
| GRO | ND |
| DRO | --- |
| Motor Oil Range Organics | --- |

| SB-18 | |
|---|---|
| Benzene | **650** |
| Ethylbenzene | 1,300 |
| GRO | **78,000** |
| DRO | **12,000** |
| Motor Oil Range Organics | **28,000** |

| SB-19 | |
|---|---|
| Benzene | **4,600** |
| Ethylbenzene | 780 |
| GRO | **6,600** |
| DRO | **1,400** |
| Motor Oil Range Organics | **22,000** |


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# GROUNDWATER ANALYTICAL RESULTS

ADDENDUM TO PHASE II ESA
HIGHWAY 1804
WILLISTON, NORTH DAKOTA

| | |
|---|---|
| Project No: | B1601155 |
| Drawing No. | B1601155_AddGW |
| Scale: | 1 in = 60 ft |
| Drawn By: | CMF |
| Date Drawn: | 02/23/2016 |
| Checked By: | JK & CL |
| Last Modified: | 4/29/16 |
| Sheet: | 1 of 1 |
| Fig. | 7 |

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# Tables

**Table 1**
**Summary of Well and Groundwater Information**
**Highway 1804 Reconstruction Project**
**Highway 1804**
**Williston, North Dakota**
**Project: B1603644**

| Well | Total Depth (ft from TOC) | Elevation (ft msl) | | | |
|---|---|---|---|---|---|
| | | Ground Elevation | TOC | Water Level | |
| | | | | 3/17/2016 | 3/31/2016 |
| SB-11 | 15.61 | 1866.8 | 1867.76 | 1854.82 | 1860.81 |
| SB-12 | 10.80 | 1867.7 | 1868.58 | 1862.57 | 1862.56 |
| SB-13 | 13.91 | 1870.2 | 1870.35 | 1863.78 | 1863.77 |
| SB-14 | 15.92 | 1873.1 | 1874.40 | 1864.35 | 1864.39 |
| SB-15 | 15.48 | 1876.2 | 1877.38 | 1864.34 | 1864.38 |
| SB-16 | 11.11 | 1866.9 | 1868.01 | 1861.86 | 1861.66 |
| SB-17 | 9.08 | 1867.6 | 1869.04 | 1862.26 | 1862.19 |
| SB-18 | 14.57 | 1869.4 | 1870.60 | 1863.21 | 1863.16 |
| SB-19 | 13.07 | 1872.5 | 1873.85 | 1862.88 | 1863.80 |
| SB-20 | 11.02 | 1876.0 | 1877.17 | <1866.15 | <1866.15 |

**Abbreviations:**

| | |
|---|---|
| msl | mean sea level |
| ft | feet |
| TOC | top of casing |
| < | Well was dry at the time of measurement. The elevation presented represents the bottom of the well. |

**Table 2**
**Summary of Soil Screening Results**
**Highway 1804 Reconstruction Project**
**Highway 1804**
**Williston, North Dakota**
**Project: B1603644**

| Depth (ft) | SB-11 | SB-12 | SB-13 | SB-14 | SB-15 | SB-16 | SB-17 | SB-18 | SB-19 | SB-20 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2.5' | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0 | 0.1 | 0.1 | 0.3 | 0.2 |
| 2.5-5' | 0.1 | 0.3 | 0.2 | 0.4 | 0.5 | 0 | 0.1 | 0.2 | 0.2 | 0.2 |
| 5-7.5' | 0.2 | 0.0 | 6.2 | 0.5 | 0.6 | 0.1 | 0.1 | --- | 0.3 | 0.2 |
| 7.5-10' | 0.1 | 0.0 | **1002** | **74.8** | 0.5 | 0.1 | EoB | 4.1 | 2.6 | 0.2 |
| 10-12.5' | 0.3 | 0.0 | **543.7** | **173.4** | --- | EoB | EoB | **327.5** | **29.7** | EoB |
| 12.5-15' | 0.2 | 0.0 | **786.3** | **967.4** | 91.0 | EoB | EoB | **21.4** | **551.7** | EoB |

**Abbreviations:**

--- Insufficient recovery to collect reading

EoB End of Boring

**Note:**

**Photoionization Detector readings for each soil boring are presented in parts per million.**

Shaded values are readings above background levels.

Table 3a
Soil Analytical Results - Shallow Samples
North Dakota Highway 1804 Improvement Project
Williston, North Dakota
Project B1603644

| Compound/Parameter | CAS No. | SB11 (7) | SB12 (5) | SB13 (7) | SB14 (7) | SB15 (9) | SB16 (5) | SB17 (5) | SB18 (8) | SB19 (8) | SB20 (3) | Trip Blank | Action Levels | EPA Regional Screening Levels | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Resident | Industrial Worker |
| | | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | NDDH | | |
| **Volatile Organic Compounds (µg/kg)** | | | | | | | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **1,600** | <20 | <16 | <0.3 | NE | 5,800 | 24,000 |
| 1,2-DICHLOROPROPANE | 78-87-5 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | <19 | <20 | <16 | <0.3 | NE | 1,000 | 4,400 |
| 1,3,5-TRIMETHYLBENZENE | 108-67-8 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **270** | <20 | <16 | <0.3 | NE | 78,000 | 1,200,000 |
| ACETONE | 67-64-1 | <180 | <170 | <220 | <160 | <160 | <170 | <180 | <190 | <200 | <160 | <3 | NE | 6,100,000 | 67,000,000 |
| BENZENE | 71-43-2 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **190** | <20 | <16 | <0.3 | NE | 1,200 | 5,100 |
| BROMOMETHANE | 74-83-9 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | <19 | <20 | <16 | <0.3 | NE | 680 | 3,000 |
| CHLOROMETHANE | 74-87-3 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | <19 | <20 | <16 | <0.3 | NE | 11,000 | 46,000 |
| ETHYLBENZENE | 100-41-4 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **760** | <20 | <16 | <0.3 | NE | 5,800 | 25,000 |
| IODOMETHANE | 74-88-4 | **29 J** | **26 J** | **29 J** | **74** | **74** | **74** | **76** | **81** | **87** | **68** | <0.38 | NE | NE | NE |
| ISOPROPYLBENZENE | 98-82-8 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **98** | <20 | <16 | <0.3 | NE | 190,000 | 990,000 |
| M+P-XYLENE | 136777-61-2 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **1,300** | <20 | <16 | <0.3 | NE | 55,000 | 240,000 |
| NAPHTHALENE | 91-20-3 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **1,400** | **97** | **61** | <0.3 | NE | 3,800 | 17,000 |
| N-BUTYLBENZENE | 104-51-8 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **99** | <20 | <16 | <0.3 | NE | 390,000 | 5,800,000 |
| N-PROPYLBENZENE | 103-65-1 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **330** | <20 | <16 | <0.3 | NE | 380,000 | 2,400,000 |
| O-XYLENE | 95-47-6 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **23 J** | <20 | <16 | <0.3 | NE | 65,000 | 280,000 |
| P-ISOPROPYLTOLUENE | 99-87-6 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **41 J** | <20 | <16 | <0.3 | NE | NE | NE |
| SEC-BUTYLBENZENE | 135-98-8 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | **46 J** | <20 | <16 | <0.3 | NE | 780,000 | 12,000,000 |
| TERT-BUTYLBENZENE | 98-06-6 | <18 | <17 | <22 | <16 | <16 | <17 | <18 | <19 | <20 | <16 | <0.3 | NE | 780,000 | 12,000,000 |
| ALL OTHER REPORTED VOCS | | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | NE | NE | NE |
| **Other Parameter (mg/kg)** | | | | | | | | | | | | | | | |
| GASOLINE RANGE ORGANICS | 8006-61-9 | <6.1 | <5.8 | <7.4 | <5.4 | <5.3 | <5.6 | <5.9 | **11** | <6.8 | <5.2 | <100 | 100 | NE | NE |
| DIESEL RANGE ORGANICS | 68334-30-5 | <1.6 | <1.7 | <1.8 | <1.6 | <1.5 | <1.7 | **2.6 J** | **38** | **4.4 J** | <1.5 | --- | 100 | NE | NE |
| MOTOR OIL RANGE ORGANICS | NE | <1.6 | **5.2 J** | **3.8 J** | **25** | <1.5 | **3.9 J** | **26** | **26** | **8.2** | **6.1** | --- | 100 | NE | NE |

**Abbreviations:**

| | |
|---|---|
| ug/kg | Micrograms per kilogram |
| mg/kg | Milligrams per kilogram. |
| < | Not detected at or above the detection limit indicated. |
| J | Estimated value. |
| ---- | Not analyzed |
| MDL | Other parameters are not listed in this table because their concentrations were below method detection limits in all samples. Individual parameters are provided in the laboratory report. |
| NE | Not Established. |

**Notes:**

| | |
|---|---|
| Gray-Shaded | Compound was detected in the respective sample, at the concentration presented. |
| Highlighted | Compound exceeds the respective action level or regional screening level Standard for either soil or groundwater. |

Table 3b
Soil Analytical Results - Deep Samples
North Dakota Highway 1804 Improvement Project
Williston, North Dakota
Project B1603644

| Compound/Parameter | CAS No. | SB11 (11) | SB12 (11) | SB13 (10) | SB14 (14) | SB15 (13) | SB16 (10) | SB17 (8) | SB18 (12) | SB19 (14) | SB20 (9) | Trip Blank | Action Levels | EPA Regional Screening Levels | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Resident | Industrial Worker |
| | | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | 3/15/2016 | NDDH | | |
| **Volatile Organic Compounds (µg/kg)** | | | | | | | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | <16 | <18 | **75,000** | **180,000 J** | <20 | <17 | <25 | **16,000** | **22,000** | <20 | <0.3 | NE | 5,800 | 24,000 |
| 1,2-DICHLOROPROPANE | 78-87-5 | <16 | <18 | <170 | **1,200** | <20 | <17 | <25 | **100** | <19 | <20 | <0.3 | NE | 1,000 | 4,400 |
| 1,3,5-TRIMETHYLBENZENE | 108-67-8 | <16 | <18 | **23,000** | <71 | <20 | <17 | <25 | **4,900** | **6,900** | <20 | <0.3 | NE | 78,000 | 1,200,000 |
| ACETONE | 67-64-1 | <160 | <180 | <1700 J | **1700 J** | <200 | <170 | <250 | <170 | **220 J** | <200 | <3 | NE | 6,100,000 | 67,000,000 |
| BENZENE | 71-43-2 | <16 | <18 | <170 | <71 | <20 | <17 | <25 | **310** | **4,900** | <20 | <0.3 | NE | 1,200 | 5,100 |
| BROMOMETHANE | 74-83-9 | **16 J** | <18 | <170 | <71 | <20 | <17 | <25 | <17 | <19 | <20 | <0.3 | NE | 680 | 3,000 |
| CHLOROMETHANE | 74-87-3 | **16 J** | <18 | <170 | <71 | <20 | <17 | <25 | <17 | <19 | <20 | <0.3 | NE | 11,000 | 46,000 |
| ETHYLBENZENE | 100-41-4 | <16 | <18 | **3,500** | **3,400** | <20 | <17 | <25 | **5,800** | **9,000** | <20 | <0.3 | NE | 5,800 | 25,000 |
| IODOMETHANE | 74-88-4 | **26 J** | **24 J** | <220 | <89 | **89** | **76** | **110** | **75** | **83** | **84** | <0.38 | NE | NE | NE |
| ISOPROPYLBENZENE | 98-82-8 | <16 | <18 | **5,000** | **16,000** | <20 | <17 | <25 | **880** | **1,300** | <20 | <0.3 | NE | 190,000 | 990,000 |
| M+P-XYLENE | 136777-61-2 | <16 | <18 | **28,000** | **1,700** | <20 | <17 | <25 | **20,000** | **29,000** | <20 | <0.3 | NE | 55,000 | 240,000 |
| NAPHTHALENE | 91-20-3 | <16 | <18 | **25,000** | **790** | <20 | <17 | <25 | **6,700** | **9,500** | <20 | <0.3 | NE | 3,800 | 17,000 |
| N-BUTYLBENZENE | 104-51-8 | <16 | <18 | **16,000** | **15,000** | <20 | <17 | <25 | **3,300** | **4,400** | <20 | <0.3 | NE | 390,000 | 5,800,000 |
| N-PROPYLBENZENE | 103-65-1 | <16 | <18 | **15,000** | **46,000** | <20 | <17 | <25 | **3,300** | **4,200** | <20 | <0.3 | NE | 380,000 | 2,400,000 |
| O-XYLENE | 95-47-6 | <16 | <18 | <170 | **320** | <20 | <17 | <25 | **230** | **390** | <20 | <0.3 | NE | 65,000 | 280,000 |
| P-ISOPROPYLTOLUENE | 99-87-6 | <16 | <18 | **3,800** | **8,900** | <20 | <17 | <25 | **750** | **1,100** | <20 | <0.3 | NE | NE | NE |
| SEC-BUTYLBENZENE | 135-98-8 | <16 | <18 | **4,400** | **12,000** | <20 | <17 | <25 | **900** | **1,200** | <20 | <0.3 | NE | 780,000 | 12,000,000 |
| TERT-BUTYLBENZENE | 98-06-6 | <16 | <18 | <170 | **270** | <20 | <17 | <25 | **19 J** | <19 | <20 | <0.3 | NE | 780,000 | 12,000,000 |
| ALL OTHER REPORTED VOCS | | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | NE | NE | NE |
| **Other Parameter (mg/kg)** | | | | | | | | | | | | | | | |
| GASOLINE RANGE ORGANICS | 8006-61-9 | <5.4 | <5.9 | **2,700** | **5,300** | <6.8 | <5.8 | <8.2 | **730** | **810** | <6.6 | <100 | 100 | NE | NE |
| DIESEL RANGE ORGANICS | 68334-30-5 | <1.5 | <1.8 | **3,200** | **6,100** | **48** | <1.7 | **6.7** | **580** | **430** | **2.2 J** | < | 100 | NE | NE |
| MOTOR OIL RANGE ORGANICS | NE | **19** | <1.8 | **330** | **590** | **68** | **1.9 J** | **3.2 J** | **62** | **27** | **5 J** | < | 100 | NE | NE |

**Abbreviations:**

| | |
|---|---|
| ug/kg | Micrograms per kilogram |
| mg/kg | Milligrams per kilogram. |
| < | Not detected at or above the detection limit indicated. |
| J | Estimated value. |
| ---- | Not analyzed |
| MDL | Other parameters are not listed in this table because their concentrations were below method detection limits in all samples. Individual parameters are provided in the laboratory report. |
| NE | Not Established. |

**Notes:**

| | |
|---|---|
| Gray-Shaded | Compound was detected in the respective sample, at the concentration presented. |
| Highlighted | Compound exceeds the respective action level or regional screening level Standard for either soil or groundwater. |

Table 4
Groundwater Analytical Results
North Dakota Highway 1804 Improvement Project
Williston, North Dakota
Project B1603644

| Compound/Parameter | CAS No. | Sample Identifier and Date Collected | | | | | | | | | | Action Levels |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SB11 | SB-12 | SB-13 | SB-14 | SB-15 | SB-16 | SB-17 | SB-18 | SB-19 | Trip Blank | |
| | | 3/17/2016 | 3/17/2016 | 3/17/2016 | 3/17/2016 | 3/17/2016 | 3/17/2016 | 3/17/2016 | 3/17/2016 | 3/17/2016 | | |
| **Volatile Organic Compounds (VOCs) (ug/L)** | | | | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | <0.6 | **0.38** | **1,700** | **1,400** | **320** | <0.3 | **0.32** | **1,200** | **660** | <0.3 | NE |
| 1,3,5-TRIMETHYLBENZENE | 108-67-8 | <0.6 | <0.3 | **490** | <30 | <3 | <0.3 | <0.3 | **270** | **140** | <0.3 | NE |
| ACETONE | 67-64-1 | <20 | <10 | <300 | <300 | **91** | <3 | <10 | **380** | <300 | <3 | NE |
| BENZENE | 71-43-2 | <0.6 | <0.3 | <30 | <30 | **12** | <0.3 | **0.58** | **650** | **4,600** | <0.3 | 5 NDDH |
| ETHYLBENZENE | 100-41-4 | <0.6 | <0.3 | **860** | **890** | **170** | <0.3 | <0.3 | **1,300** | **780** | <0.3 | 700 EPA |
| ISOPROPYLBENZENE | 98-82-8 | <0.6 | <0.3 | **130** | **110** | **27** | <0.3 | <0.3 | **95** | **46** | <0.3 | NE |
| M+P-XYLENE | 136777-61-2 | <0.6 | <0.3 | **3,000** | **860** | **120** | <0.3 | **0.38** | **3,000** | **1,900** | <0.3 | NE |
| NAPHTHALENE | 91-20-3 | **2.3** | **1.1** | **890** | **350** | **18** | <0.3 | **1.5** | **830** | **590** | <0.3 | NE |
| N-BUTYLBENZENE | 104-51-8 | <0.6 | <0.3 | **110** | **46** | **4.9** | <0.3 | <0.3 | **64** | **34** | <0.3 | NE |
| N-PROPYLBENZENE | 103-65-1 | <0.6 | <0.3 | **300** | **270** | **58** | <0.3 | <0.3 | **250** | **90** | <0.3 | NE |
| O-XYLENE | 95-47-6 | <0.6 | <0.3 | **91** | **37** | **8.9** | <0.3 | <0.3 | **63** | **46** | <0.3 | NE |
| P-ISOPROPYLTOLUENE | 99-87-6 | <0.6 | **0.58** | **50** | **31** | **7.9** | <0.3 | <0.3 | **31** | <30 | <0.3 | NE |
| SEC-BUTYLBENZENE | 135-98-8 | <0.6 | <0.3 | **57** | **50** | **9.1** | <0.3 | <0.3 | **37** | <30 | <0.3 | NE |
| ALL OTHER REPORTED VOCS | | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | NE |
| **Other Parameters (ug/L)** | | | | | | | | | | | | |
| GASOLINE RANGE ORGANICS | 8006-61-9 | <200 | <100 | **38,000** | **21,000** | **2,100** | <100 | <100 | **28,000** | **22,000** | <100 | 500 NDDH |
| DIESEL RANGE ORGANICS | 68334-30-5 | --- | <390 | **2,800,000** | **110,000** | **21,000** | <400 | --- | **78,000** | **6,600** | --- | 500 NDDH |
| MOTOR OIL RANGE ORGANICS | | --- | <390 | **260,000** | **15,000** | **6,900** | <400 | --- | **12,000** | **1,400** | --- | 500 NDDH |

**Abbreviations:**

| | |
|---|---|
| ug/L | Micrograms per liter |
| < | Not detected at or above the detection limit indicated. |
| J | Estimated value. |
| ---- | Not analyzed. |
| MDL | Other parameters are not listed in this table because their concentrations were below method detection limits in all samples. Individual parameters are provided in the laboratory report. |
| NDDH | North Dakota Department of Health |
| EPA | United States Environmental Protection Agency Maximum Contaminant Level |

**Notes:**

| | |
|---|---|
| Gray-Shaded | Compound was detected in the respective sample, at the concentration presented. |
| Highlighted | Compound exceeds NDDH Standard for either soil or groundwater. Note: NDDH Standards do not address all compounds listed. |

# Appendix A

# Standard Operating Procedures

# A. Purpose

The objective of this Standard Operating Procedure (SOP) is to establish a consistent method and format for visual identification and description of soil samples collected in the field. This SOP is applicable to soil samples collected during completion of soil borings (see SOP 203 – Soil Boring Observation and Sampling) and test trench excavations (see SOP 211 – Test Pit and Test Trench Observation and Sampling).

# B. Health and Safety

Field work should be performed in accordance with the *Braun Intertec Corporate Health and Safety Manual Standard Operating Procedures* and the site-specific health and safety plan (HASP).

# C. Referenced SOPs

- SOP 101 – Field Notes and Documentation
- SOP 203 – Soil Boring Observation and Sampling
- SOP 208 – Soil Grab Sample Collection
- SOP 209 – Soil Composite Sample Collection
- SOP 210 – Soil Stockpile Sampling
- SOP 211 – Test Pit and Test Trench Observation and Sampling

# D. Equipment and Supplies

- Soil boring or test trench log forms (see SOP 203 – Soil Boring Observation and Sampling or SOP 211 – Test Pit and Test Trench Observation and Sampling)
- Field report form (see SOP 101 – Field Notes and Documentation) or field logbook
- Waterproof and/or indelible ink pens

# E. Procedure

As soil samples are collected in the field, a visual identification and description will be completed as described below. The *Standard Practice for Description and Identification of Soils* (American Society for Testing and Materials [ASTM] D2488-00) was used to prepare this SOP, and soil descriptions should follow that document as applicable.

When visually describing soils in the field, the following information should be provided at a minimum; however, more detailed descriptions are encouraged.

Prepare the soil description **in the order shown**. All field personnel should have a laminated copy of the Field Guide for Soil and Stratigraphic Analysis and use this field guide for classification of soil.

## E.1. Main Soil

A description of the main soil group name using the United Soil Classification System (USCS) nomenclature (e.g., gravel, sand, silt, clay, silty sand, clayey sand, organic soil, etc.).

## E.3. Group Symbol

List the Group Symbol in parenthesis after the main soil group name. Group symbols include the following:

- CL = Lean Clay; Lean Clay with Sand
- ML = Silt; Silt with Sand
- CH = Fat Clay
- OL/OH = Organic Soils
- GW/GP = Well Graded Gravel/Poorly Graded Gravel
- GP-SM = Poorly Graded Gravel with Silt
- GP-SC = Poorly Graded Gravel with Clay
- GM= Silty Gravel
- GC = Clayey Gravel
- SW/SP = Well Graded Sand/Poorly Graded Sand
- SP-SM = Poorly Graded Sand with Silt
- SP-SC = Poorly Graded Sand with Clay
- SM = Silty Sand
- SC = Clayey Sand

## E.4. Color

Describe the color of the main soil group (e.g., brown, gray, etc.). Preferably, the color should be identified using a Munsell® Soil Color Chart. The soil color should be described for moist samples. If the soil sample contains layers or patches of varying colors (e.g., mottled), this should be noted and representative colors shall be described. If the color described is for dry soils, this must be noted on the log.

## E.5. Moisture

Describe the overall moisture of the soil sample using the terms dry, moist, or wet (do not use the term "saturated"):

- Dry = absence of moisture, dusty, dry
- Moist = damp, but no visible water
- Wet = visible water; usually soil is below the water table or perched water

## E.6. Percentage by Weight

Describe the percentage by weight of the soil type(s) present in the sample using ASTM adjectives based on the percentages present within the sample:

- Trace = < 5%
- Few = 5 to 10%
- Little = 10 to 25%
- Some = 30 to 45%
- Mostly = 50 to 100%

## E.7. Grain Size

**Coarse-grained Soil**

If the soil is coarse-grained (i.e., sand or gravel), include a brief description of the predominant particle grain size(s) (e.g., fine, medium, coarse) (see field guide).

**Fine-grained Soil**

If the soil is fine-grained (i.e., clay or silt), describe the consistency based on finger pressure:

- Very soft = thumb will penetrate soil more than 1 inch
- Soft = thumb will penetrate soil about 1 inch
- Firm = thumb will penetrate soil about 1/4 inch
- Hard = thumb will not indent soil, but thumbnail will easily make a mark
- Very hard = thumbnail will not indent soil

## E.8. Plasticity

Describe the plasticity of the soil sample as follows:

- Nonplastic = A 1/8-inch (3-mm) thread cannot be rolled at any water content.
- Low = The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
- Medium = The thread is easily rolled and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
- High = It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

## E.9. Structure

Describe any structures present in the soil sample as follows:

- Stratified = alternating layer of varying materials or color layers at least 1/4 inch or greater, note thickness.
- Laminated = alternating layer of varying materials or color layers less than 1/4 inch thick, note thickness.
- Fissured = Breaks along definite planes of fracture with little resistant to fracturing.
- Slickensided = Fracture planes appear polished or glossy.
- Blocky = cohesive soil that can be broken down into angular lumps which resist further breakdown.
- Lensed = Inclusions of small pockets of different soils such as small lenses of sand scattered in a mass of clay, note thickness.
- Homogeneous = same color and appearance throughout.

## E.10. Mottling

Mottling is a patchwork of different colors in mineral soil (usually orange or rust against a background of grey or blue) which indicates periods of anaerobic (wet) conditions. If mottling is present, note the fraction of the sample that is mottled (e.g., 1/2 mottled and the color of the mottle).

## E.11. Cementation

Note if any cementation is present.

## E.12. Unusual Materials or Debris

Note the presence of any unusual materials or debris (e.g., bricks, glass, wood). Include the specific depth interval of the occurrence of unique material in the description or in the Remarks. See SOP 203 – Soil Boring Observation and Sampling, SOP 210 – Soil Stockpile Sampling, and SOP 211 – Test Pit and Test Trench Observation and Sampling for additional information.

## E.13. Odor

Indicate any odors that are present such as organic or unusual odors. Soils that have a significant amount of organic content usually have a distinct color and odor. If the odor is of decaying vegetation, state that there is an "organic odor" present. If the odor is unusual (petroleum, herbicides, chemicals) describe the odor intensity (strong, moderate, mild, no odor) and a general descriptor. However, do not use specific chemical names to describe the odor. For example stating that "a strong chemical odor is present from 2 to 3 feet below ground surface (bgs)" is correct; however, stating that the soil "has a gasoline odor" is NOT correct.

**Note: When smelling soil, do not inhale deeply or repeatedly; the chemicals present may represent a health risk.**

## E.14. Fill

If the soil is fill or probable fill, note in brackets (e.g., [fill], [probable fill]).

Waste/debris terminology should be as specific and descriptive as possible (e.g., concrete and glass vs. demolition debris). Category names of waste/debris should not be used. Imprecise or incorrect terminology may cause undue concern among regulators. Several important distinctions should be drawn:

- **Wood:** The term wood should not be used alone. Differentiate between tree/brush waste and lumber. To the extent feasible, lumber should be further qualified as unadulterated or treated and the type of treatment described (e.g., painted, green treated, brown treated, creosote, etc).
- **Debris:** The term debris should not be used alone. Most often, the term is used to refer to demolition debris; however, the distinction should be drawn between demolition debris consisting of road/paving demolition debris and building demolition debris.
    - Note and carefully describe the presence of concrete pieces or blocks, bricks, bituminous, recycled gravel, pipe, or tubing.
    - Asbestos is more frequently associated with building demolition debris; although, it can also be present with road/paving materials, particularly in cementitious utility conduits.
    - Household waste or garbage should be noted as such if present.
- **Sizes/Amounts:** Qualitative terms like small, medium, large, etc., should be avoided in favor of dimensions (i.e., inches, feet, etc), unless they are defined by ASTM or other commonly understood conventions. When reasonable, descriptions of sizes and percentages should be quantitative (e.g., "3 to 4 feet" or "less than 1 percent [%]") rather than qualitative (e.g., "large") or semi-quantitative (e.g., "several," or "a few").

## E.15. Example

The following are examples of correct visual soil classifications:

- Silty sand (SM), dark brown (10YR 3/3), moist, mostly sand with some low plasticity fines and trace gravel, sand grains are fine to medium grained, firm, homogeneous.
- Clay (CL), gray (7.5YR 5/1), wet, mostly fines with trace sand, medium to high plasticity, soft, laminated, moderate chemical odor(s) [fill].
- Poorly Graded Sand (SP), dark brown (10YR 3/3), moist, mostly coarse-grained sand, trace fine sand, non-plastic, homogenous, debris present [debris fill]. Debris present from 4 to 5 feet bgs. Debris content is 25-30 % of the material and consists mostly of concrete (4 to 6 inches in diameter), and some broken glass (< 1 inch in diameter).

## E.16. Groundwater

If and when groundwater is encountered, note the depth to water in the log.

## E.17. Collecting Soil Samples

If soil samples are collected for laboratory analysis, refer to the appropriate SOPs including SOP 203 – Soil Boring Observation and Sampling, SOP 208 – Soil Grab Sample Collection, SOP 209 – Soil Composite Sample Collection, SOP 210 – Soil Stockpile Sampling, and SOP 211 – Test Pit and Test Trench Observation and Sampling.

## E.18. Geotechnical Logs

To ensure consistent logs across Braun Intertec disciplines, soil samples will be collected and classified by a Braun Intertec Geotechnical Engineer. The Geotechnical Engineer's log is a supplement to the field log and is not meant to be a replacement for the field log.

Place one or more representative portions of each two-foot interval into sealable moisture-proof containers (jars or quart-sized polyethylene sealable bags) without ramming or distorting any apparent stratification. Seal the containers to prevent evaporation of soil moisture.

Affix labels to the containers indicating job designation, boring number, and sample depth. If there is a soil change within the interval, collect a soil sample for each stratum and note its depth.

Deliver the samples to the soil classification lab in the Bloomington office. Include a copy of the soil boring log form.

## E.19. Data and Records Management

Observations should be documented in accordance with SOP 101 – Field Notes and Documentation.

## E.20. Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures described in the work plan should be followed.

# A. Purpose

This Standard Operating Procedure (SOP) describes procedure for screening soil potentially contaminated with volatile organic chemicals, such as petroleum, and/or hazardous substances that can be ionized within the energy range of the photoionization detector (PID) lamp being used. The purpose of the bag headspace procedure is to assist with site soil characterization of organic chemical contamination, soil sample selection for laboratory analysis, and soil management during excavation.

## A.1. Scope and Applicability

This procedure should be used during field activities where bag headspace procedures are required by regulatory guidance or site-specific work plans. This procedure is used for soil characterization and not for health and safety monitoring.

## A.2. Summary of Method

A quart-size polyethylene bag with a tight sealing closure is filled with soil (approximately 1 cup) and immediately closed leaving air in the top portion of the bag (headspace). Organic vapors are allowed to accumulate in the headspace for approximately 10 minutes at room temperature. The bag is opened slightly and the tip of the PID probe is inserted to the middle of the headspace. The highest PID response observed is recorded in the field notes.

## A.3. Definitions

**Background Readings:** The PID measurement of ambient air and bag headspace reading without soil in the bag.

**Ionization energy (IE)**: The energy required to displace an electron and "ionize" a compound. Replaces old term *Ionization Potential* (IP).

**Photoionization Detector (PID):** The PID is a portable, nonspecific, vapor/gas detector employing the principle of photoionization to detect and measure real-time concentrations of a variety of chemical compounds, both organic and inorganic, in air.

# B. Health and Safety

Field work should be performed in accordance with the Braun Intertec Corporate Health and Safety Manual Standard Operating Procedures and the site-specific health and safety plan (HASP).

# C. Referenced SOPs

- SOP 101 – Field Notes and Documentation
- SOP 201 – Classification of Soil
- SOP 204 – Calibration of 580B PID
- SOP 205 – Calibration of MiniRAE PID

# D. Equipment and Supplies

- Quart-size polyethylene sealable bags
- PID with appropriate lamp (10.6 or 11.7 electron volts [eV])
- Field report form (see SOP 101 – Field Notes and Documentation) or field logbook
- Waterproof and/or indelible ink pens
- Personal Protective Equipment (PPE)

# E. Procedure

## E.1. Preparation

PID lamps with two different light energy (in eV) are available for use. The 11.7 eV lamp measures the broadest range of compounds, while the 10.6 eV lamp is somewhat more selective. The standard lamp used is 10.6 eV unless otherwise specified by the technical project manager.

Calibrate the PID onsite at least daily to yield total organic vapors in parts per million (ppm) using an isobutylene standard. If field personnel are at multiple project locations in one day, calibrate the PID upon arrival to each project location. See either SOP 204 – Calibration of 580B PID or SOP 205 – Calibration of MiniRAE PID for calibration procedures. Record the lamp IE, standard used, date, time and results of the daily calibration.

## E.2. Collection

- Visually examine the soil for staining or sheens. Note observations in field logbook. Describe the type and general amount of debris, if present, in the field logbook (see SOP 201 – Classification of Soil).
- Do not intentionally smell the soil for odors, but note unintentional olfactory indication of contamination in the field logbook.
- Collect soil samples in increments according to instructions established by the project manager or the site-specific work plan.
- **Soil samples for laboratory analysis should not be collected from the sealable bag used for headspace analysis.**
- While wearing proper PPE (Nitrile gloves at a minimum), field personnel should fill approximately one-quarter of a quart-size polyethylene sealable bag with a tight sealing closure (about 1 cup of soil), leaving air in the upper portion of the sealable bag (the volume ratio of soil: headspace should be 1:3). Close the quart-size polyethylene sealable bag immediately, making sure all soil is clear from the path of the bag's seal. Break apart the soil while vigorously shaking the bag for 15 seconds, avoiding puncturing a hole in the bag or tearing apart the zipper.
- Allow the headspace to develop in the sealable bag at room temperature (e.g., approximately 50 °F or greater) for 10 to 20 minutes. If the temperature is below approximately 50 °F, allow the headspace to develop within a heated vehicle or building. Record the ambient temperature during headspace screening.
- Vigorously shake the sealable bag again for 15 seconds. Open the sealable bag slightly, enough for the end of the PID probe tip to enter the bag and insert the tip to the middle of the headspace, avoiding contact with the soil and/or potential moisture from condensation in the sealable bag. Watch the PID screen for the highest reading (ppm). The maximum reading should appear in less than 5 seconds. Record the maximum PID reading reached in the field notes. Record the actual PID reading, do not round the number.
- In addition to screening a soil sample, a background PID headspace reading should be established in the field. Under the same conditions as the screened soil sample (heated vehicle or building, etc.), take an empty quart-size polyethylene sealable bag, puff it up with air, and insert the probe of the PID in the same way as the soil sample. Watch the screen of the PID for the highest PID reading (ppm). Record the maximum PID reading reached in the field notes. Record the actual PID reading, do not round the number.

## E.3. Cautions

PIDs provide non-specific measurement of the presence of organic compounds including the following: aromatics, ketones and aldehydes, amines and amides, chlorinated hydrocarbons, sulfur compounds, saturated and unsaturated hydrocarbons, and alcohols. The light energy in eV emitted by the PID lamp must be greater than the IE of the compound(s) of interest. However, 11.7-eV lamps should only be used when compounds with IEs over 10.6 eV are expected and are the primary contaminants. Examples include carbon tetrachloride, methylene chloride, chloroform, and 1,1,1-trichloroethane.

Consult the NIOSH Guide to Chemical Hazards for ionization potentials for most common contaminants. The PID will not measure the following: radiation, air ($N_2$, $O_2$, $CO_2$, $H_2O$), natural gas (methane, ethane, propane), acid gases (HCl, HF, $HNO_3$), common toxics (CO, HCN, $SO_2$), freons, ozone, hydrogen peroxide, polychlorinated biphenyls (PCBs), or greases.

## E.4. Interferences

Excessive moisture in the headspace may cause a false positive response on the PID due to condensation in the sensor causing current leakage across the electrodes. The problem is exacerbated by dirty, bent out of shape, or corroded electrodes. This problem tends to manifest itself by a “drift” upward of the measurement, rather than a sharp response to the presence of an organic vapor. Humidity from wet soil also absorbs UV light and may dampen response when vapors are present. The warming of cold, wet samples tends to cause excessive humidity in the headspace, and if the PID is colder than the samples, condensation in the PID can result. Avoid getting condensate or soil in the inlet probe (use a PID dust filter to avoid getting soil in the inlet probe). Avoid getting soil in the grooves of the bag seal, so that it will close securely.

## E.5. Data and Records Management

Field data should be recorded and managed in accordance with SOP 101 – Field Notes and Documentation. Documentation should include the following:

- Calibration: date, time, calibration standard, and result
- Maintenance performed, if any
- Background readings: ambient air and quart-size polyethylene sealable bag
- Ambient air temperature at which headspace screened
- Sample identification information per sample method SOP
- General observations: condensed moisture in the bag, unusual odors associated with the soil sample and/or ambient air

### E.6. Quality Assurance/Quality Control

Field personnel should check the PID maintenance log before beginning each new job to make sure that scheduled maintenance is current. Erratic PID responses in the field should be evaluated, and field maintenance performed or the PID should be replaced. The PID should be calibrated daily in the field.

Field personnel should perform a humidity response test prior to PID use. Two quick methods for humidity response tests include exhaling gently into the PID for 10 to 15 seconds or cupping your clean hand over the PID inlet probe, since the moisture from your hand provides a fairly continuous high humidity stream (see Photographs 1 and 2). Do not block the air intake for the PID. The PID should show little to no response from these test. If the PID shows more than 5 ppm, the probe, lamp, and sensor may need cleaning. Record the results of the humidity response test in the field logbook.

Ambient air quality at the work site should be checked and recorded as should a headspace sample of an empty polyethylene sealable bag. All quality assurance (QA) checks should be documented in the field logbook.

Quality assurance/quality control (QA/QC) procedures described in the work plan should be followed.

## F. References

Addressing PID Instruments Moisture Sensitivity: Humidity Effect on PID Instruments, Technical Note TN-163, RAE Systems by Honeywell; San Jose, CA, February, 2014.

Minnesota Pollution Control Agency, Soil Sample Collection and Analysis Procedures, Field Screening Procedures. Guidance Document 4-04, c-prp4-04. Petroleum Remediation Program, Minnesota Pollution Control Agency; St. Paul, MN, September, 2008.

NIOSH, Pocket Guide to Chemical Hazards, NIOSH Publications; Cincinnati, OH, September 2007.

Photograph 1: Humidity Response Test

Photograph 2: Humidity Response Test

## A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to describe procedures to be used to conduct and document soil boring observations and sampling either from a direct-push probe or drill rig.

## B. Health and Safety

Field work should be performed in accordance with the *Braun Intertec Corporate Health and Safety Manual Standard Operating Procedures* and the site-specific health and safety plan (HASP).

In addition to potential exposure to hazardous materials, observing drilling of soil borings presents safety risks due to working near drilling equipment.

One of the biggest risks during probe sampling is the use of utility knives to cut open the plastic sleeves that hold soil collected by the probe. Instruct the probe operator to cut the sleeves open. Do not cut the sleeves open yourself.

## C. Referenced SOPs

- SOP 101 – Field Notes and Documentation
- SOP 201 – Classification of Soil
- SOP 202 – Organic Vapor Screening
- SOP 208 – Soil Grab Sample Collection
- SOP 209 – Soil Composite Sample Collection
- SOP 311 – Groundwater Sample Collection
- SOP 403 – Soil Vapor Sampling from a Borehole and with a Hand Probe
- SOP 702 – Management of Investigation Derived Waste

## D. Equipment and Supplies

- Soil Boring Log Form (see Attachment A)
- Global Positioning System (GPS) unit or measuring tape
- Photoionization detector (PID) with appropriate lamp (see SOP 202 – Organic Vapor Soil Screening)
- Soil sampling equipment (see SOP 208 – Soil Grab Sample Collection and SOP 209 – Soil Composite Sample Collection)
- Field report form (see SOP 101 – Field Notes and Documentation) or field logbook
- Groundwater sampling equipment (see SOP 311 – Groundwater Sample Collection)
- Soil vapor sampling equipment (see SOP 403 – Soil Vapor Sampling from a Borehole and with a Hand Probe)
- Waterproof and/or indelible ink pens
- Cell phone camera or digital camera
- Personal Protective Equipment (PPE)
- 55-gallon drum, if necessary

# E. Procedure

## E.1. Disposition of Drill Cuttings, Excess Probe Soil and Removed Groundwater

Before the drilling begins, review the proper procedures for disposition of soil and groundwater in accordance with the Sampling Plan and SOP 702 – Management of Investigation Derived Waste. If necessary, ensure that steel drums are provided to collect either the soil cuttings or excess removed groundwater.

## E.2. Underground Utility Locates

Ensure that utilities are marked and the soil borings are located a safe distance from any buried utility.

## E.3. Boring Location and Numbering

A day or two before the field work, review the written scope of work with the project manager. The scope should define the boring numbering scheme, boring locations, depths, sample intervals, and types of samples to be collected. Make sure that all required field equipment is prepared and in good working condition.If required, determine the appropriate place to dispose of cuttings or provide an appropriate container per SOP 702 – Management of Investigation Derived Waste.

During many projects, boring locations will be marked by Braun Intertec personnel, such as the CADD Staker, before the field event begins. In other cases, the responsibility to identify boring locations is left to field personnel on the day of the event. In either case once on site, identify the boring locations with the driller (or drilling subcontractor). Ensure that utilities are marked and that all proposed soil borings are located a safe distance from any buried utility. Review planned sampling procedures to ensure they meet the scope of work. In particular, review sample intervals and water sampling depths, if appropriate.

If the marked boring location must be changed, it is critical that the new location is clear of underground utilities. In some cases, utility marking does not apply to new locations and the work cannot proceed until new locations have been cleared. Use a measuring tape or GPS unit to document soil boring locations relative to the original marked location. This also may be necessary if a boring location must be modified due to refusal or if additional borings are advanced based on field observations (i.e., step out borings). If boring locations were not previously located with a GPS unit, make arrangements for proper location either on the day of the event or later.

## E.4. Drilling

The driller or probe operator will collect soil samples from the sample intervals and provide the samples to the field personnel. It is the responsibility of the driller or probe operator to decontaminate the sampler and reusable sampling equipment to minimize cross-contamination using a brush in a detergent and water wash, followed by a clean water rinse between intervals.

Field personnel are responsible for making field observations of the soil, screening soil samples for volatile organic vapors, and collecting soil or water samples both for laboratory analysis and geotechnical classification by a Braun Intertec Geotechnical Engineer.

## E.5. Soil Description

Note the surface composition (e.g., concrete, asphalt, grass, etc). If the material at the surface is less than six inches thick, indicate the material at the surface of the borehole (e.g., 4-inch concrete, asphalt, grass, gravel, etc.) in the Remarks section of the log form.

The driller will bring the sampler to the surface and open it at the request of field personnel. Record the percent recovery and the length of sample recovered in feet. Describe the soil type, color, stratification, and conditions of the soil samples recovered (see SOP 201 – Classification of Soil).

## E.6. Soil Screening

Don new disposable gloves. Collect a small sample of the soil from each two-foot interval (or less) for organic vapor screening in the field using a photoionization detector (PID) (SOP 202 – Organic Vapor Soil Screening). Record the results of the vapor screening on the boring log form.

## E.7. Soil Sampling

Collect soil samples for chemical analysis in the field as soon as possible after retrieval. To collect soil samples for chemical analyses as specified in the project-specific work plan or Sampling and Analysis Plan, refer to SOP 208 – Soil Grab Sample Collection and SOP 209 – Soil Composite Sample Collection.

As samples are collected for laboratory analysis, note the sample name, including depth, time collected, and analytical test in the Remarks section of the Boring Log. For example:

- GP-1(8-10') @ 10:15 – DRO, GRO and VOCs
- ST-3 (2-4') @ 10:45 – RCRA Metals

## E.8. Groundwater Sampling

**Groundwater Sampling from a Borehole Advanced by a Drill Rig**

The drilling operator will advance the auger to the specified depth and prepare for groundwater collection. The operator may use one of the two following methods:

- In the case of shallow groundwater and a fairly competent soil formation, the operator advances the auger to the desired depth for groundwater sampling. All drilling equipment is removed from the borehole. Groundwater samples are collected from inside the open borehole.
- In the case of a less competent soil formation, the operator advances the auger to the desired depth for groundwater sampling. A length of 2-inch diameter PVC pipe with a five or ten foot screened portion on the bottom is extended down the open hole. All drilling equipment is removed from the borehole. After an appropriate period of time, groundwater samples are collected from inside the screened portion of the PVC pipe.

**Groundwater Sampling from a Probe Borehole**

The sampling probe operator will advance the probe to the depth you specify and prepare the sampler for groundwater collection. The operator may use one of the two following methods:

- In the case of shallow groundwater and a fairly competent soil formation, the sampling probe is advanced to the desired depth for groundwater sampling. All sampling probe equipment is removed from the probe hole. A length of ¾-inch diameter PVC pipe with a five or ten foot screened portion on the bottom is extended down the open hole. Groundwater samples are collected from the screened portion of the PVC pipe.
- In many cases the operator advances a special sampling probe to the desired depth for groundwater sampling. The tip of the probe will be an "expendable point" which is snugly attached to the probe. Inside the probe is a stainless steel screen section. The sampling probe is pulled up, releasing the expendable point and exposing the screen. Groundwater samples are collected from the screened portion of the stainless steel screen.

**Groundwater Sample Collection**

Refer to SOP 311 – Groundwater Sample Collection for procedures for collecting groundwater samples.

As samples are collected for laboratory analysis, note the boring identifier, time collected, and analytical test in the Remarks section of the Boring Log.

## E.9. Soil Vapor Sampling

Refer to SOP 403 – Soil Vapor Sampling from a Borehole and with a Hand Probe for details on collecting the soil vapor sample.

As samples are collected for laboratory analysis, note the boring identifier, time collected, and analytical test in the Remarks section of the Boring Log.

## E.10. Geotechnical Logs

To ensure consistent logs across Braun Intertec disciplines, samples of soil cores will be collected and classified by a Braun Intertec Geotechnical Engineer. The Geotechnical Engineer's log is a supplement to the field log and is not meant to be a replacement for the field log.

Place one or more representative portions of each two-foot interval into sealable moisture-proof containers (resealable bags) without ramming or distorting any apparent stratification. Seal the bag to prevent evaporation of soil moisture.

Label the containers indicating job designation, boring number, and sample depth. If there is a soil change within the interval, collect a soil sample for each stratum and note its depth.

Deliver the samples to the soil classification lab in the Bloomington office. Include a copy of the soil boring log form.

## E.11. Documentation

Logs of borings are required in investigation reports. Use the Boring Log form (Attachment A). Descriptions of soil samples collected in the field are described in SOP 201 – Classification of Soil.

Photographs will be taken of the boring location in accordance with SOP 101 – Field Notes and Documentation. A photographic log should be included with the field notes. If there is something specific field personnel would like the viewer to note, be sure it is specified in the description.

## E.12. Backfilling/Restoration

The boring will be backfilled with bentonite grout or reused soil cuttings, if appropriate, as allowed or required by the well code.

## E.13. Data and Records Management

Observations should be documented in accordance with SOP 101 – Field Notes and Documentation.

## E.14. Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures described in the work plan should be followed.

| Project Name/Project Number: | | Log of Boring No. | |
|---|---|---|---|
| Boring Location Notes: | | Surface Elevation: | Total Depth: |
| Drilling Contractor/Drilling Method: | | Date/Time Started: | Date/Time finished: |
| Sampling Equipment (i.e., Macro-Core, split spoon): | | Depth to Water: | Measuring Point: |
| Field Personnel: | Responsible Prof./Reg. No.: | Surface Type (asphalt, concrete etc.) | |

| Depth (Feet) | Sample Recovery | PID (ppm) | DESCRIPTION<br>Name (USCS Symbol), color, moist, grain size, amount of gravel, sand, or fines, plasticity, consistency, structure, inclusions or debris present, geologic interpretation (fill, native, till, lacustrine etc.) | Analytical Sample Interval | Remarks (odors, blow counts, debris, analytical sample IDs, temp well details etc.) | |
|---|---|---|---|---|---|---|
| | | | | | | |



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| Project Name/Project Number: | Log of Boring No. (Cont.) |
|---|---|

| Depth (Feet) | Sample Recovery | PID (ppm) | DESCRIPTION<br>Name (USCS Symbol), color, moist, grain size, amount of gravel, sand, or fines, plasticity, consistency, structure, inclusions or debris present, geologic interpretation (fill, native, till, lacustrine etc.) | Analytical Sample Interval | Remarks |
|---|---|---|---|---|---|
| | | | | | |



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# Appendix B

# Soil Borings Logs

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# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-11**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1866.8 | 0.0 | | | | | | | |
| 1866.3 | 0.5 | | Topsoil. | | | | | |
| | | SP | SAND, fine-grained, trace Gravel, olive brown (2.5Y4/4), poorly graded, dry. | | | 0.2 | | |
| | | | | | | 0.1 | | |
| 1862.8 | 4.0 | | | | | | | |
| | | CL | LEAN CLAY, trace sand, olive brown (2.5Y4/4), medium plasticity, dry. | | | | | |
| 1861.3 | 5.5 | | | | | | | |
| 1860.8 | 6.0 | SM | SILTY SAND, olive brown (2.5Y4/4), dry. | | | | | |
| | | CL | SANDY LEAN CLAY, trace Gravel, angular, olive brown (2.5Y4/4), saturated. | | | 0.2 | | SB-11 (7), @ 16:35, VOC, GRO & DRO |
| | | | | | | 0.1 | | |
| 1856.3 | 10.5 | | | | | | | |
| 1855.8 | 11.0 | SC | CLAYEY SAND, trace Gravel, subangular, olive brown (2.5Y4/4), poorly graded, wet, firm. | | | 0.3 | | SB-11 (11), @ 16:55, VOC, GRO & DRO |
| | | CH | FAT CLAY, trace Sand and Gravel, rounded, olive brown (2.5Y4/4) with iron-staining, wet, firm. | | ▽ | | | |
| 1851.8 | 15.0 | | | | | | | |
| | | | END OF BORING. | | | 0.2 | | |
| | | | 1 inch well installed and screened from 5 to 15 feet below ground surface. | | | | | |
| | | | Water level measured on 3/1/7/16 at 12.94 feet from top of 2 inch casing. | | | | | |

LOG OF BORING N:\GINT\PROJECTS\AX PROJECTS\2016\01155.GPJ BRAUN_V8_CURRENT.GDT 4/28/16 15:01

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# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-12**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1867.7 | 0.0 | | | | | | | |
| 1867.2 | 0.5 | CL | Topsoil. LEAN CLAY, trace Gravel, subangular, olive brown (2.5Y4/4), dry, firm. -6 inch Sand lenses at 4 feet. | | | 0.2 | | |
| 1862.2 | 5.5 | ML | SILT, trace Gravel, subangular, olive brown (2.5Y4/4), moist, firm. | | ▽ | 0.3 | | SB-12 (5), @ 17:20, VOC, GRO & DRO |
| 1860.7 | 7.0 | CL | LEAN CLAY, olive brown (2.5Y4/4), wet, soft. | | | 0.0 | | |
| 1858.7 | 9.0 | ML | SILTY GRAVEL, rounded, light yellowish brown (2.5Y6/4) with iron-staining, saturated. | | | 0.0 | | |
| 1856.7 | 11.0 | CH | FAT CLAY, olive gray (5Y4/2), high plasticity, wet, firm. | | | 0.0 | | SB-12 (11), @ 17:30, VOC, GRO & DRO |
| 1852.7 | 15.0 | | END OF BORING. 1 inch well installed and screened from 5 to 10 feet below ground surface. Water level measured on 3/1/7/16 at 6.01 feet from top of 2 inch casing. | | | 0.0 | | |

LOG OF BORING N:\GINT\PROJECTS\AX PROJECTS\2016\01155.GPJ BRAUN_V8_CURRENT.GDT 4/28/16 15:01

BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-13**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1870.2 | 0.0 | | | | | | | |
| 1869.7 | 0.5 | | Topsoil | | | | | |
| | | CL | LEAN CLAY, trace Gravel, subangular, light brown (7.5YR6/4), low plasticity, dry, firm. | | | 0.1 | | |
| 1867.2 | 3.0 | | | | | | | |
| | | SP | SAND, subangular, well graded, light brown (7.5YR6/4), dry. | | | | | |
| 1866.2 | 4.0 | | | | | | | |
| | | CH | FAT CLAY, trace Sand, fine-grained, dark olive gray (5Y3/2), high plasticity, moist. | | | 0.2 | | |
| 1863.2 | 7.0 | | | | ▽ | | | |
| | | CL | LEAN CLAY, dark brown (10YR3/3), medium plasticity, medium firmness, saturated. | | | 6.2 | | SB-13 (7), @ 17:50, VOC, GRO & DRO |
| 1861.7 | 8.5 | | | | | | | |
| | | SM | SILTY SAND with GRAVEL, subangular to rounded, dark gray (10YR4/1), saturated. | | | 1002.0 | | Strong Petroleum Odor |
| | | | | | | 543.7 | | SB-13 (10), @ 18:00, VOC, GRO & DRO |
| 1855.7 | 14.5 | | | | | | | |
| 1855.2 | 15.0 | CH | FAT CLAY, dark gray (10YR4/1), high plasticity, wet, firm. | | | 786.3 | | |

END OF BORING.

1 inch well installed and screened from 3 to 13 feet below ground surface.

Water level measured on 3/1/7/16 at 6.57 feet from top of 2 inch casing.

LOG OF BORING N:\GINT\PROJECTS\AX PROJECTS\2016\01155.GPJ BRAUN_V8_CURRENT.GDT 4/28/16 15:01

BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-14**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1873.1 | 0.0 | | | | | | | |
| 1872.6 | 0.5 | | Topsoil | | | | | |
| 1871.6 | 1.5 | CL | LEAN CLAY, trace Gravel, brown (10YR5/3), medium plasticity, dry. | | | 0.2 | | |
| 1870.6 | 2.5 | CL | GRAVELY LEAN CLAY, subangular, light gray (10YR7/1), dry. | | | | | |
| | | CL | LEAN CLAY, trace Sand, brown (10YR5/3), low plasticity, moist. | | | 0.4 | | |
| | | | | | | 0.5 | | SB-14 (7), @ 18:30, VOC, GRO & DRO |
| 1864.6 | 8.5 | | | | | | | |
| 1863.6 | 9.5 | CL | LEAN CLAY, trace Sand, dark gray (10YR4/1), low plasticity, wet. | | | 74.8 | | Petroleum Odor |
| 1862.1 | 11.0 | SP | SAND, trace Gravel, subangular to rounded, dark gray (10YR4/1), well sorted, saturated. | | ▽ | | | |
| 1861.6 | 11.5 | CH | FAT CLAY, brown (10YR5/3), wet. | | | 173.4 | | |
| | | SM | SILTY SAND with GRAVEL, subangular to rounded, dark gray (10YR4/1), poorly graded, saturated. | | | | | |
| 1858.1 | 15.0 | | | | | | | SB-14 (14 ), @ 18:50, VOC, GRO & DRO Strong Petroleum Odor |
| | | | END OF BORING. | | | 967.4 | | |
| | | | 1 inch well installed and screened from 5 to 15 feet below ground surface. | | | | | |
| | | | Water level measured on 3/1/7/16 at 10.05 feet from top of 2 inch casing. | | | | | |

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BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-15**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1876.2 | 0.0 | | | | | | | |
| 1875.7 | 0.5 | | Topsoil | | | | | |
| | | CL | LEAN CLAY, trace Gravel, subangular, light brown (7.5YR6/3), low plasticity, dry. | | | 0.2 | | |
| 1872.2 | 4.0 | | | | | | | |
| | | SP | SAND, trace Gravel, subangular to rounded, well sorted, light brown (7.5YR6/3), dry. | | | 0.5 | | |
| | | | | | | 0.6 | | |
| | | | -wet at 9 feet. | | | 0.5 | | SB-15 (9), @ 19:10, VOC, GRO & DRO |
| | | | -dark gray (7.5YR4/1) at 13 feet. | | ▽ | 91.0 | | SB-15 (13), @ 19:20, VOC, GRO & DRO Petroleum Odor |
| 1861.2 | 15.0 | | | | | | | |

END OF BORING.

1 inch well installed and screened from 5 to 15 feet below ground surface.

Water level measured on 3/1/7/16 at 13.04 feet from top of 2 inch casing.

BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-16**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1866.9 | 0.0 | | | | | | | |
| 1865.9 | 1.0 | ML | SANDY SILT, olive brown (2.5Y4/3), dry. | | | | | |
| 1864.9 | 2.0 | ML | SANDY SILT with GRAVEL, subangular, pale yellow (2.5Y7/4), dry. | | | 0.0 | | |
| 1861.9 | 5.0 | ML | SANDY SILT, dark olive brown (2.5Y4/3), low plasticity, dry, firm. | | | | | |
| | | CL | LEAN CLAY, olive brown (2.5Y4/3) with iron-staining, moist, firm. | | ▽ | 0.0 | | SB-16 (5), @ 11:30, VOC, GRO & DRO |
| | | | -trace Sand, wet at 8 feet. | | | 0.1 | | |
| 1856.9 | 10.0 | | | | | 0.1 | | |
| | | | END OF BORING. | | | | | SB-16 (10), @ 11:45, VOC, GRO & DRO |

1 inch well installed and screened from 5 to 10 feet below ground surface.

Water level measured on 3/1/7/16 at 6.15 feet from top of 2 inch casing.

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BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-17**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1867.6 | 0.0 | | | | | | | |
| 1867.1 | 0.5 | | Topsoil. | | | | | |
| | | CL-ML | SILTY CLAY, trace Gravel, low plasticity, olive (5Y5/3), firm, dry. | | | 0.1 | | |
| | | | | | | 0.1 | | |
| 1863.1 | 4.5 | | | | | | | |
| 1862.1 | 5.5 | CL-ML | LEAN CLAY, trace Sand, low plasticity, dark olive gray (5Y3/2), firm, moist. | | | | | SB-17 (5), @ 12:10, VOC, GRO & DRO |
| | | CL-ML | LEAN CLAY, dark gray (5Y4/1), wet, soft. | | ▽ | | | |
| | | | | | | 0.1 | | |
| 1859.6 | 8.0 | | | | | | | |
| | | | END OF BORING. | | | | | SB-17 (8), @ 12:15, VOC, GRO & DRO |
| | | | Probe refusal at 8 feet, some concrete chips in probe tip, offset 2 feet E and W. Results in similar refusal. | | | | | |
| | | | 1 inch well installed and screened from 3 to 8 feet below ground surface. | | | | | |
| | | | Water level measured on 3/1/7/16 at 6.78 feet from top of 2 inch casing. | | | | | |

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-18**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Tests or Notes |
|---|---|---|---|---|---|---|---|
| 1869.4 | 0.0 | | | | | | |
| 1868.9 | 0.5 | | Topsoil | | | | |
| 1867.9 | 1.5 | SM | SILTY SAND, fine-grained, trace Gravel, subrounded, olive (5Y5/4), dry. | | | 0.1 | |
| | | CL | LEAN CLAY, low plasticity, olive (5Y5/4), dry. | | | 0.2 | |
| 1862.4 | 7.0 | CH | FAT CLAY, medium plasticity, olive (5Y5/4), wet, soft. | | ▽ | 4.1 | SB-18 (8), @ 12:45, VOC, GRO & DRO |
| 1858.9 | 10.5 | SM | SILTY SAND, very dark gray (5Y3/1), subangular, poorly graded, saturated. | | | 327.5 | Strong Petroleum Odor |
| 1857.4 | 12.0 | | | | | | |
| 1856.9 | 12.5 | CL | LEAN CLAY, olive (5Y4/4), medium plasticity, wet, firm. | | | | SB-18 (12), @ 13:00, VOC, GRO & DRO |
| 1856.4 | 13.0 | SM | SILTY SAND, dark gray (5Y4/1), subangular, poorly graded, saturated. | | | | |
| | | CH | FAT CLAY, trace Gravel, dark gray (5Y4/1), high plasticity, wet, firm. | | | 21.4 | |
| 1854.4 | 15.0 | | END OF BORING. | | | | |

1 inch well installed and screened from 4 to 14 feet below ground surface.

Water level measured on 3/1/7/16 at 7.39 feet from top of 2 inch casing.

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-19**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1872.5 | 0.0 | | | | | | | |
| 1871.5 | 1.0 | SM | SILTY SAND, fine-grained, olive brown (2.5Y4/4), dry. | | | | | |
| 1869.0 | 3.5 | CL | LEAN CLAY, trace Gravel, yellowish brown (10YR5/6), low plasticity, dry. | | | 0.3 | | |
| 1866.5 | 6.0 | CL | LEAN CLAY, trace Sand, olive brown (2.5Y4/3), low plasticity, moist. | | | 0.2 | | |
| 1865.5 | 7.0 | CL | LEAN CLAY, trace Sand, olive brown (2.5Y4/3), low plasticity, wet. | | | | | |
| 1864.5 | 8.0 | ML | SILT, olive (5Y4/4), wet. | | | 0.3 | | SB-19 (8), @ 13:15, VOC, GRO & DRO |
| 1860.5 | 12.0 | SM | SILTY SAND, olive (5Y4/4), saturated, soft. | | ▽ | 2.6<br>29.7 | | Slight Petroleum Odor |
| 1857.5 | 15.0 | CL | LEAN CLAY, olive (5Y4/4), high plasticity,<br>-6 inch Sand lenses at 13 1/2 feet. | | | 551.7 | | SB-19 (14), @ 13:30, VOC, GRO & DRO |
| | | | END OF BORING.<br>1 inch well installed and screened from 3 to 13 feet below ground surface.<br>Water level measured on 3/1/7/16 at 10.97 feet from top of 2 inch casing. | | | | | Strong Petroleum Odor |

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BRAUN INTERTEC

# LOG OF BORING

**Braun Project B1601155**
**Highway 1804 Soils Investigation**
**Phase II ESA**
**Highway 1804**
**Williston, North Dakota**

BORING: **SB-20**

LOCATION: See Sketch.

DRILLER: Range | METHOD: Push Probe | DATE: **3/15/16** | SCALE: **1" = 4'**

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | PID ppm | Well | Tests or Notes |
|---|---|---|---|---|---|---|---|---|
| 1876.0 | 0.0 | | | | | | | |
| 1874.5 | 1.5 | SM | SILTY SAND, trace Gravel, olive brown (2.5Y4/4), low plasticity, dry. | | | 0.2 | | |
| 1872.0 | 4.0 | CL | LEAN CLAY, with GRAVEL, angular, yellowish brown (10YR5/6), dry. | | | | | SB-20 (3), @ 14:15, VOC, GRO & DRO |
| 1869.5 | 6.5 | SP | SAND, coarse-grained, trace Gravel, subangular to rounded, brown (10YR4/3), moist. | | | 0.2 | | |
| 1867.0 | 9.0 | SM | SILTY SAND, fine-grained, brown (10YR4/3), moist. | | | 0.2 | | |
| 1866.0 | 10.0 | SP | SAND, coarse-grained, rounded, dark brown (10YR3/3), wet. | | | 0.2 | | SB-20 (9), @ 14:25, VOC, GRO & DRO |

END OF BORING.

1 inch well installed and screened from 0 to 10 feet below ground surface.

Water not encountered.

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\AX PROJECTS\2016\01155.GPJ BRAUN_V8_CURRENT.GDT 4/28/16 15:01

# Appendix C

# Laboratory Reports

Monday, April 11, 2016

Josh Kadrmas
Braun Intertec
1341 South 20th St
Bismarck, ND 58504

Re: ALS Workorder: 1603307
Project Name: Hwy 1804 Additional
Project Number: B1601155

Dear Mr. Kadrmas:

Twenty soil samples and one water sample were received from Braun Intertec, on 3/17/2016. The samples were scheduled for the following analyses:

| |
|---|
| GC/MS Volatiles |
| Total Extractable Petroleum Hydrocarbons (Diesel) |

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Julie Ellingson
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

| ALS Environmental – Fort Collins | |
|---|---|
| | |
| Accreditation Body | License or Certification Number |
| Alaska (AK) | UST-086 |
| Alaska (AK) | CO01099 |
| Arizona (AZ) | AZ0742 |
| California (CA) | 06251CA |
| Colorado (CO) | CO01099 |
| Connecticut (CT) | PH-0232 |
| Florida (FL) | E87914 |
| Idaho (ID) | CO01099 |
| Kansas (KS) | E-10381 |
| Kentucky (KY) | 90137 |
| L-A-B (DoD ELAP/ISO 170250) | L2257 |
| Louisiana (LA) | 05057 |
| Maryland (MD) | 285 |
| Missouri (MO) | 175 |
| Nebraska(NE) | NE-OS-24-13 |
| Nevada (NV) | CO000782008A |
| New York (NY) | 12036 |
| North Dakota (ND) | R-057 |
| Oklahoma (OK) | 1301 |
| Pennsylvania (PA) | 68-03116 |
| Tennessee (TN) | 2976 |
| Texas (TX) | T104704241 |
| Utah (UT) | CO01099 |
| Washington (WA) | C1280 |

# 1603307

The samples were received intact at 6.8° Celsius.

**GC/MS Volatiles:**
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

- All compounds in each of the daily (continuing) calibration verifications were within 20%D with the following exceptions:

  On 03/20/16, several compounds were high. These compounds were detected in the associated samples, so the data were flagged.
  On 03/26/16, acetone was low. This compound was detected in the associated samples, so the data were flagged.

- All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria with the following exceptions:

| Spiked Compound | QC Sample | Direction |
|---|---|---|
| Several Compounds | VL160320-3LCS & LCSD | High |
| 2,2-dichloropropane | VL160320-3LCS & LCSD | RPD |
| Chloroethane | VL160325-3LCS & LCSD | RPD |

These compounds were not detected in the associated samples. The quantitations of target compounds were not compromised. The reporting limits are defensible because the elevated recoveries demonstrate an increase in sensitivity. No further action was taken.

- All surrogate recoveries were within acceptance criteria with the following exceptions:

| Surrogate | Sample | Direction |
|---|---|---|
| Toluene-d8 | -8 | High |
| Toluene-d8 | -19 | High |
| 4-Bromofluorobenzene | -8 | High |

The samples were re-analyzed at higher dilutions due to the concentration of target analytes. The surrogates were also outside the acceptance criteria, which suggest matrix interferences. Both sets of data have been reported.

The high recoveries of toluene-d8 and 4-bromofluorobenzene for sample -8 are due to non-target interferences observed in the sample chromatogram which bias the results high.

- 1,2,4-Trimethylbenzene for sample 1603307-8 was analyzed out of hold.

All remaining acceptance criteria were met.

**DRO:**
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated for dro extends from C10 to C21 and motor oil extends from C21-C32.

The surrogate recovery for sample -8 was outside control limits (high). Inspection of the chromatogram indicated co-elution of the surrogate peak with target component peaks, biasing the surrogate result high. No further action was taken

All remaining acceptance criteria were met.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

**OrderNum:** 1603307
**Client Name:** Braun Intertec
**Client Project Name:** Hwy 1804 Additional
**Client Project Number:** B1601155
**Client PO Number:**

| Client Sample Number | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|---|---|---|---|---|---|
| SB11 (7) | 1603307-1 | | SOIL | 15-Mar-16 | 16:35 |
| SB11 (11) | 1603307-2 | | SOIL | 15-Mar-16 | 16:55 |
| SB12 (5) | 1603307-3 | | SOIL | 15-Mar-16 | 17:20 |
| SB12 (11 | 1603307-4 | | SOIL | 15-Mar-16 | 17:30 |
| SB13 (7) | 1603307-5 | | SOIL | 15-Mar-16 | 17:50 |
| SB13 (10) | 1603307-6 | | SOIL | 15-Mar-16 | 18:00 |
| SB14 (7) | 1603307-7 | | SOIL | 15-Mar-16 | 18:30 |
| SB14 (14) | 1603307-8 | | SOIL | 15-Mar-16 | 18:50 |
| SB15 (9) | 1603307-9 | | SOIL | 15-Mar-16 | 19:10 |
| SB15 (13) | 1603307-10 | | SOIL | 15-Mar-16 | 19:20 |
| SB16 (5) | 1603307-11 | | SOIL | 15-Mar-16 | 11:30 |
| SB16 (10) | 1603307-12 | | SOIL | 15-Mar-16 | 11:45 |
| SB17 (5) | 1603307-13 | | SOIL | 15-Mar-16 | 12:10 |
| SB17 (8) | 1603307-14 | | SOIL | 15-Mar-16 | 12:15 |
| SB18 (8) | 1603307-15 | | SOIL | 15-Mar-16 | 12:45 |
| SB18 (12) | 1603307-16 | | SOIL | 15-Mar-16 | 13:00 |
| SB19 (8) | 1603307-17 | | SOIL | 15-Mar-16 | 13:15 |
| SB20 (3) | 1603307-18 | | SOIL | 15-Mar-16 | 14:15 |
| SB19 (14) | 1603307-19 | | SOIL | 15-Mar-16 | 13:30 |
| SB20 (9) | 1603307-20 | | SOIL | 15-Mar-16 | 14:25 |
| Trip Blank | 1603307-21 | | WATER | 15-Mar-16 | |

# ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.
Turnaround time for samples received Saturday will be calculated beginning from the next business day.

ALS WORKORDER # 1603307

| | | | | | |
|---|---|---|---|---|---|
| TURNAROUND TIME | 24 hr | SAMPLER | Josh Kadrmas | PAGE | 1 of 2 |
| PROJECT NAME | Hwy 1804 Additional | SITE ID | | DISPOSAL | BY LAB or RETURN |
| PROJECT No. | B1601155 | EDD FORMAT | | | |
| | | PURCHASE ORDER | | | |
| COMPANY NAME | Braun Intertec | BILL TO COMPANY | Same | | |
| SEND REPORT TO | Paul Miller | INVOICE ATTN TO | | | |
| ADDRESS | 1341 S 20th St #5 | ADDRESS | | | |
| CITY / STATE / ZIP | Bismarck, ND 58504 | CITY / STATE / ZIP | | | |
| PHONE | 701 426 4077 (Paul) | PHONE | | | |
| FAX | | FAX | | | |
| E-MAIL | pamiller@braunintertec.com | E-MAIL | | | |

PARAMETER/METHOD REQUEST FOR ANALYSIS

| | |
|---|---|
| A | VOCs |
| B | TVPH / GRO |
| C | TEPH / DRO |
| D | TEPH / MO |
| E | Moisture |
| F | |
| G | |
| H | |
| I | |
| J | |

| LAB ID | FIELD ID | MATRIX | SAMPLE DATE | SAMPLE TIME | # OF BOTTLES | PRESERVATIVE | QC | A | B | C | D | E | F | G | H | I | J | SEE NOTES SECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SB11 (7) | Soil | ~~3/14/16~~ 3/15/16 | 1635 | 5 | 3 MeOH / ~~2 amp~~ none | | X | X | X | X | X | | | | | | |
| 2 | SB11 (11) | | 3/15/16 | 1655 | | | | | | | | | | | | | | |
| 3 | SB12 (5) | | | 1720 | | | | | | | | | | | | | | |
| 4 | SB12 (11) | | | 1730 | | | | | | | | | | | | | | |
| 5 | SB13 (7) | | | 1750 | | | | | | | | | | | | | | |
| 6 | SB13 (10) | | | 1800 | | | | | | | | | | | | | | |
| 7 | SB14 (7) | | | 1830 | | | | | | | | | | | | | | |
| 8 | SB14 (14) | | | 1850 | | | | | | | | | | | | | | |
| 9 | SB15 (9) | | | 1910 | | | | | | | | | | | | | | |
| 10 | SB15 (13) | | | 1920 | 4 | 2 MeOH / 2 none | | | | | | | | | | | | X |
| 11 | SB16 (5) | | | 1130 | | | | | | | | | | | | | | |
| 12 | SB16 (10) | | | 1145 | | | | | | | | | | | | | | |

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

NOTES

X 1 VOA vial broke during packing 2 remain

REPORT LEVEL / QC REQUIRED

| | |
|---|---|
| | Summary (Standard QC) |
| | LEVEL II (Standard QC) |
| | LEVEL III (Std QC + forms) |
| | LEVEL IV (Std QC + forms + raw |

PRESERVATION KEY 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other

Form 202r9

| | SIGNATURE | PRINTED NAME | DATE | TIME |
|---|---|---|---|---|
| RELINQUISHED BY | | Josh Kadrmas | 3/16/16 | 1400 |
| RECEIVED BY | | Rebecca Meola | 3/17/16 | 1025 |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |

# ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.
Turnaround time for samples received Saturday will be calculated beginning from the next business day.

| ALS WORKORDER # | |
|---|---|
| 1603367 | |
| PAGE | 2 of 2 |
| DISPOSAL | BY LAB or RETURN |

| | | | | | |
|---|---|---|---|---|---|
| TURNAROUND TIME | 24 hr | SAMPLER | Josh Kadrmas | | |
| PROJECT NAME | Hwy 1804 | SITE ID | | | |
| PROJECT No. | B1601155 | EDD FORMAT | | | |
| | | PURCHASE ORDER | | | |
| COMPANY NAME | Braun Intertec | BILL TO COMPANY | Same | | |
| SEND REPORT TO | Paul Miller | INVOICE ATTN TO | | | |
| ADDRESS | 1341 S 20th St #5 | ADDRESS | | | |
| CITY / STATE / ZIP | Bismarck, ND 58504 | CITY / STATE / ZIP | | | |
| PHONE | 701-426 4077 (Paul) | PHONE | | | |
| FAX | | FAX | | | |
| E-MAIL | pamiller@braunintertec.com | E-MAIL | | | |

PARAMETER/METHOD REQUEST FOR ANALYSIS

| | |
|---|---|
| A | VOCs |
| B | TVPH / GRO |
| C | TEPH / DRO |
| D | TEPH / MO |
| E | Moisture |
| F | |
| G | |
| H | |
| I | |
| J | |

| LAB ID | FIELD ID | MATRIX | SAMPLE DATE | SAMPLE TIME | # OF BOTTLES | PRESERVATIVE | QC | A | B | C | D | E | F | G | H | I | J | SEE NOTES SECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | SB17 (5) | Soil | 3/15/16 | 1210 | 5 | 3 MeOH / 2 none | | X | X | X | X | X | | | | | | |
| 14 | SB17 (8) | | | 1215 | | | | | | | | | | | | | | |
| 15 | SB18 (8) | | | 1245 | | | | | | | | | | | | | | |
| 16 | SB18 (12) | | | 1300 | | | | | | | | | | | | | | |
| 17 | SB19 (8) | | | 1315 | | | | | | | | | | | | | | |
| 18 | ~~SB20 (3)~~ SB20 (3) JTF 3/16/16 | | | 1415 | | | | | | | | | | | | | | |
| 19 | SB19 (14) | | | 1330 ~~1425~~ JTF | | | | | | | | | | | | | | |
| 20 | SB20 (9) | | | 1425 JTF 3/16/16 | | | | | | | | | | | | | | |
| 21 | Trip Blank | | | | | | Trip | X | | | | | | | | | | |

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

NOTES

| REPORT LEVEL / QC REQUIRED | |
|---|---|
| | Summary (Standard QC) |
| | LEVEL II (Standard QC) |
| | LEVEL III (Std QC + forms) |
| | LEVEL IV (Std QC + forms + raw |

PRESERVATION KEY: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other

Form 202r9

| | SIGNATURE | PRINTED NAME | DATE | TIME |
|---|---|---|---|---|
| RELINQUISHED BY | | Josh Kadrmas | 3/16/16 | 1400 |
| RECEIVED BY | | Rebecca Moola | 3/17/16 | 1025 |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |

**ALS Environmental - Fort Collins**
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: Brown intertec  Workorder No: 1603307

Project Manager: JE  Initials: RLA  Date: 3/17/16

| | | | |
|---|---|---|---|
| 1. Does this project require any special handling in addition to standard ALS procedures? | | YES | (NO) |
| 2. Are custody seals on shipping containers intact? | NONE | (YES) | NO |
| 3. Are Custody seals on sample containers intact? | (NONE) | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present or other representative documents? | | (YES) | NO |
| 5. Are the COC and bottle labels complete and legible? | | (YES) | NO |
| 6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.) | | (YES) | NO |
| 7. Were airbills / shipping documents present and/or removable? | DROP OFF | (YES) | NO |
| 8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles) | (N/A) | YES | NO |
| 9. Are all aqueous non-preserved samples pH 4-9? | (N/A) | YES | NO |
| 10. Is there sufficient sample for the requested analyses? | | (YES) | NO |
| 11. Were all samples placed in the proper containers for the requested analyses? | | (YES) | NO |
| 12. Are all samples within holding times for the requested analyses? | | (YES) | NO |
| 13. Were all sample containers received intact? (not broken or leaking, etc.) | | (YES) | NO |
| 14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea | N/A | (YES) | NO |
| 15. Do any water samples contain sediment? Amount<br>Amount of sediment: ____ dusting ____ moderate ____ heavy | (N/A) | YES | NO |
| 16. Were the samples shipped on ice? | | (YES) | NO |
| 17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4) | RAD ONLY | YES | (NO) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cooler #: | 1 | | | | | | | |
| Temperature (°C): | 6.8°C | | | | | | | |
| No. of custody seals on cooler: | 2 | | | | | | | |
| DOT Survey/ Acceptance Information — External µR/hr reading: | 8 | | | | | | | |
| Background µR/hr reading: | 8 | | | | | | | |

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? (YES) / NO / NA Contact: Paul Miller Date/Time: [illegible]

**Project Manager Signature / Date:** [signature] 3/17/16

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1603307

FedEx Express Package US Airbill

FedEx Tracking Number 8071 0578 8866

[redacted]

Recipient's Copy

1 From

Date 3/16/16

Sender's Name Josh Kadrmas Phone 701 730 2302

Company Brown Intertec

Address 1311 S 20th St #5

Dept/Floor/Suite/Room

City Bismarck State ND ZIP 58504

2 Your Internal Billing Reference

3 To

Recipient's Name Phone 197 049-0151

Company ALS ENVIRONMENTAL QCP

Address 225 COMMERCE DR

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept/Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City FORT COLLINS State CO ZIP 80524-2762

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

0117729674

8071 0578 8866

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [x] FedEx Tube
- [ ] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes As per attached Shipper's Declaration.
- [ ] Yes Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain recip. Acct. No.

[redacted]

Total Packages Total Weight ____ lbs.

*Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

Rev. Date 2/12 • Part #163134 • ©1994–2012 FedEx • PRINTED IN U.S.A. SRM

611

fedex.com 1.800.GoFedEx 1.800.463.3339

10682

247044

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB11 (7)
**Legal Location:**
**Collection Date:** 3/15/2016 16:35

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-1
**Matrix:** SOIL
**Percent Moisture:** 8.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.4 | MG/KG | 1 | 3/21/2016 13:41 |
| MOTOR OIL RANGE ORGANICS | ND | | 5.4 | MG/KG | 1 | 3/21/2016 13:41 |
| *Surr: O-TERPHENYL* | *77* | | *49-114* | *%REC* | 1 | 3/21/2016 13:41 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/20/2016** | | PrepBy: **SDW** |
| DICHLORODIFLUOROMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| CHLOROMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| VINYL CHLORIDE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| BROMOMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| CHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| TRICHLOROFLUOROMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1-DICHLOROETHENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| ACETONE | ND | | 610 | UG/KG | 50 | 3/20/2016 18:27 |
| **IODOMETHANE** | **29** | J | **61** | **UG/KG** | 50 | 3/20/2016 18:27 |
| CARBON DISULFIDE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| METHYLENE CHLORIDE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| TRANS-1,2-DICHLOROETHENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| METHYL TERTIARY BUTYL ETHER | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1-DICHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/20/2016 18:27 |
| CIS-1,2-DICHLOROETHENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 2-BUTANONE | ND | | 610 | UG/KG | 50 | 3/20/2016 18:27 |
| BROMOCHLOROMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| CHLOROFORM | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1,1-TRICHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 2,2-DICHLOROPROPANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| CARBON TETRACHLORIDE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1-DICHLOROPROPENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2-DICHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| BENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| TRICHLOROETHENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2-DICHLOROPROPANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| DIBROMOMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| BROMODICHLOROMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| CIS-1,3-DICHLOROPROPENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 4-METHYL-2-PENTANONE | ND | | 610 | UG/KG | 50 | 3/20/2016 18:27 |
| TOLUENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1,2-TRICHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 2-HEXANONE | ND | | 610 | UG/KG | 50 | 3/20/2016 18:27 |
| TETRACHLOROETHENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,3-DICHLOROPROPANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| DIBROMOCHLOROMETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2-DIBROMOETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1-CHLOROHEXANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB11 (7)
**Legal Location:**
**Collection Date:** 3/15/2016 16:35

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-1
**Matrix:** SOIL
**Percent Moisture:** 8.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| ETHYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| M+P-XYLENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| O-XYLENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| STYRENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| BROMOFORM | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| ISOPROPYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2,3-TRICHLOROPROPANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| BROMOBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| N-PROPYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 2-CHLOROTOLUENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 4-CHLOROTOLUENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| TERT-BUTYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| SEC-BUTYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,3-DICHLOROBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| P-ISOPROPYLTOLUENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,4-DICHLOROBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| N-BUTYLBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2-DICHLOROBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2,4-TRICHLOROBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| HEXACHLOROBUTADIENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| NAPHTHALENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| 1,2,3-TRICHLOROBENZENE | ND | | 61 | UG/KG | 50 | 3/20/2016 18:27 |
| *Surr: DIBROMOFLUOROMETHANE* | *96* | | *80-124* | *%REC* | 50 | 3/20/2016 18:27 |
| *Surr: TOLUENE-D8* | *105* | | *81-119* | *%REC* | 50 | 3/20/2016 18:27 |
| *Surr: 4-BROMOFLUOROBENZENE* | *100* | | *78-129* | *%REC* | 50 | 3/20/2016 18:27 |
| GASOLINE RANGE ORGANICS | ND | | 6100 | UG/KG | 50 | 3/20/2016 18:27 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB11 (11)
**Legal Location:**
**Collection Date:** 3/15/2016 16:55

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-2
**Matrix:** SOIL
**Percent Moisture:** 5.2

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.2 | MG/KG | 1 | 3/21/2016 16:16 |
| **MOTOR OIL RANGE ORGANICS** | **19** | M | **5.2** | **MG/KG** | 1 | 3/21/2016 16:16 |
| *Surr: O-TERPHENYL* | *74* | | *49-114* | *%REC* | 1 | 3/21/2016 16:16 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/20/2016** | | PrepBy: **SDW** |
| DICHLORODIFLUOROMETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| **CHLOROMETHANE** | **16** | J | **54** | **UG/KG** | 50 | 3/20/2016 18:48 |
| VINYL CHLORIDE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| **BROMOMETHANE** | **16** | J | **54** | **UG/KG** | 50 | 3/20/2016 18:48 |
| CHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| TRICHLOROFLUOROMETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1-DICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| ACETONE | ND | | 540 | UG/KG | 50 | 3/20/2016 18:48 |
| **IODOMETHANE** | **26** | J | **54** | **UG/KG** | 50 | 3/20/2016 18:48 |
| CARBON DISULFIDE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| METHYLENE CHLORIDE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| TRANS-1,2-DICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| METHYL TERTIARY BUTYL ETHER | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1-DICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| VINYL ACETATE | ND | | 110 | UG/KG | 50 | 3/20/2016 18:48 |
| CIS-1,2-DICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 2-BUTANONE | ND | | 540 | UG/KG | 50 | 3/20/2016 18:48 |
| BROMOCHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| CHLOROFORM | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1,1-TRICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 2,2-DICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| CARBON TETRACHLORIDE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1-DICHLOROPROPENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2-DICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| BENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| TRICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2-DICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| DIBROMOMETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| BROMODICHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| CIS-1,3-DICHLOROPROPENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 4-METHYL-2-PENTANONE | ND | | 540 | UG/KG | 50 | 3/20/2016 18:48 |
| TOLUENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1,2-TRICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 2-HEXANONE | ND | | 540 | UG/KG | 50 | 3/20/2016 18:48 |
| TETRACHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,3-DICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| DIBROMOCHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2-DIBROMOETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1-CHLOROHEXANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB11 (11)
**Legal Location:**
**Collection Date:** 3/15/2016 16:55

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-2
**Matrix:** SOIL
**Percent Moisture:** 5.2

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| ETHYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| M+P-XYLENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| O-XYLENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| STYRENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| BROMOFORM | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| ISOPROPYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2,3-TRICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| BROMOBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| N-PROPYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 2-CHLOROTOLUENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 4-CHLOROTOLUENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| TERT-BUTYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| SEC-BUTYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,3-DICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| P-ISOPROPYLTOLUENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,4-DICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| N-BUTYLBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2-DICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 110 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2,4-TRICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| HEXACHLOROBUTADIENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| NAPHTHALENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| 1,2,3-TRICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/20/2016 18:48 |
| *Surr: DIBROMOFLUOROMETHANE* | *96* | | *80-124* | *%REC* | 50 | 3/20/2016 18:48 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 50 | 3/20/2016 18:48 |
| *Surr: 4-BROMOFLUOROBENZENE* | *101* | | *78-129* | *%REC* | 50 | 3/20/2016 18:48 |
| GASOLINE RANGE ORGANICS | ND | | 5400 | UG/KG | 50 | 3/20/2016 18:48 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB12 (5)
**Legal Location:**
**Collection Date:** 3/15/2016 17:20

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-3
**Matrix:** SOIL
**Percent Moisture:** 11.8

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.6 | MG/KG | 1 | 3/21/2016 14:43 |
| **MOTOR OIL RANGE ORGANICS** | **5.2** | J | **5.6** | **MG/KG** | 1 | 3/21/2016 14:43 |
| *Surr: O-TERPHENYL* | *82* | | *49-114* | *%REC* | 1 | 3/21/2016 14:43 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/20/2016** | | PrepBy: **SDW** |
| DICHLORODIFLUOROMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| CHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| VINYL CHLORIDE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| BROMOMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| CHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| TRICHLOROFLUOROMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| ACETONE | ND | | 580 | UG/KG | 50 | 3/20/2016 19:10 |
| **IODOMETHANE** | **26** | J | **58** | **UG/KG** | 50 | 3/20/2016 19:10 |
| CARBON DISULFIDE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| METHYLENE CHLORIDE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| TRANS-1,2-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| METHYL TERTIARY BUTYL ETHER | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1-DICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/20/2016 19:10 |
| CIS-1,2-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 2-BUTANONE | ND | | 580 | UG/KG | 50 | 3/20/2016 19:10 |
| BROMOCHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| CHLOROFORM | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1,1-TRICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 2,2-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| CARBON TETRACHLORIDE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2-DICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| BENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| TRICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| DIBROMOMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| BROMODICHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| CIS-1,3-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 4-METHYL-2-PENTANONE | ND | | 580 | UG/KG | 50 | 3/20/2016 19:10 |
| TOLUENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1,2-TRICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 2-HEXANONE | ND | | 580 | UG/KG | 50 | 3/20/2016 19:10 |
| TETRACHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,3-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| DIBROMOCHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2-DIBROMOETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1-CHLOROHEXANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB12 (5)
**Legal Location:**
**Collection Date:** 3/15/2016 17:20

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-3
**Matrix:** SOIL
**Percent Moisture:** 11.8

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| ETHYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| M+P-XYLENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| O-XYLENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| STYRENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| BROMOFORM | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| ISOPROPYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2,3-TRICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| BROMOBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| N-PROPYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 2-CHLOROTOLUENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 4-CHLOROTOLUENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| TERT-BUTYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| SEC-BUTYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,3-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| P-ISOPROPYLTOLUENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,4-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| N-BUTYLBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2,4-TRICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| HEXACHLOROBUTADIENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| NAPHTHALENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| 1,2,3-TRICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/20/2016 19:10 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/20/2016 19:10 |
| *Surr: TOLUENE-D8* | *104* | | *81-119* | *%REC* | 50 | 3/20/2016 19:10 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 50 | 3/20/2016 19:10 |
| GASOLINE RANGE ORGANICS | ND | | 5800 | UG/KG | 50 | 3/20/2016 19:10 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB12 (11
**Legal Location:**
**Collection Date:** 3/15/2016 17:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-4
**Matrix:** SOIL
**Percent Moisture:** 16.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.9 | MG/KG | 1 | 3/21/2016 15:14 |
| MOTOR OIL RANGE ORGANICS | ND | | 5.9 | MG/KG | 1 | 3/21/2016 15:14 |
| *Surr: O-TERPHENYL* | *80* | | *49-114* | *%REC* | 1 | 3/21/2016 15:14 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/20/2016** | | PrepBy: **SDW** |
| DICHLORODIFLUOROMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| CHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| VINYL CHLORIDE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| BROMOMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| CHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| TRICHLOROFLUOROMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1-DICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| ACETONE | ND | | 590 | UG/KG | 50 | 3/20/2016 19:31 |
| **IODOMETHANE** | **24** | J | **59** | **UG/KG** | 50 | 3/20/2016 19:31 |
| CARBON DISULFIDE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| METHYLENE CHLORIDE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| TRANS-1,2-DICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| METHYL TERTIARY BUTYL ETHER | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1-DICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/20/2016 19:31 |
| CIS-1,2-DICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 2-BUTANONE | ND | | 590 | UG/KG | 50 | 3/20/2016 19:31 |
| BROMOCHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| CHLOROFORM | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1,1-TRICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 2,2-DICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| CARBON TETRACHLORIDE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1-DICHLOROPROPENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2-DICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| BENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| TRICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2-DICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| DIBROMOMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| BROMODICHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| CIS-1,3-DICHLOROPROPENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 4-METHYL-2-PENTANONE | ND | | 590 | UG/KG | 50 | 3/20/2016 19:31 |
| TOLUENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1,2-TRICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 2-HEXANONE | ND | | 590 | UG/KG | 50 | 3/20/2016 19:31 |
| TETRACHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,3-DICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| DIBROMOCHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2-DIBROMOETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1-CHLOROHEXANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB12 (11
**Legal Location:**
**Collection Date:** 3/15/2016 17:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-4
**Matrix:** SOIL
**Percent Moisture:** 16.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| ETHYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| M+P-XYLENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| O-XYLENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| STYRENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| BROMOFORM | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| ISOPROPYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2,3-TRICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| BROMOBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| N-PROPYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 2-CHLOROTOLUENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 4-CHLOROTOLUENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| TERT-BUTYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| SEC-BUTYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,3-DICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| P-ISOPROPYLTOLUENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,4-DICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| N-BUTYLBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2-DICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2,4-TRICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| HEXACHLOROBUTADIENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| NAPHTHALENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| 1,2,3-TRICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/20/2016 19:31 |
| *Surr: DIBROMOFLUOROMETHANE* | *97* | | *80-124* | *%REC* | 50 | 3/20/2016 19:31 |
| *Surr: TOLUENE-D8* | *105* | | *81-119* | *%REC* | 50 | 3/20/2016 19:31 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 50 | 3/20/2016 19:31 |
| GASOLINE RANGE ORGANICS | ND | | 5900 | UG/KG | 50 | 3/20/2016 19:31 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB13 (7)
**Legal Location:**
**Collection Date:** 3/15/2016 17:50

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-5
**Matrix:** SOIL
**Percent Moisture:** 17.1

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 6 | MG/KG | 1 | 3/21/2016 15:45 |
| **MOTOR OIL RANGE ORGANICS** | **3.8** | J | **6** | **MG/KG** | 1 | 3/21/2016 15:45 |
| *Surr: O-TERPHENYL* | *82* | | *49-114* | *%REC* | 1 | 3/21/2016 15:45 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/20/2016** | | PrepBy: **SDW** |
| DICHLORODIFLUOROMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| CHLOROMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| VINYL CHLORIDE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| BROMOMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| CHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| TRICHLOROFLUOROMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1-DICHLOROETHENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| ACETONE | ND | | 740 | UG/KG | 50 | 3/20/2016 19:52 |
| **IODOMETHANE** | **29** | J | **74** | **UG/KG** | 50 | 3/20/2016 19:52 |
| CARBON DISULFIDE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| METHYLENE CHLORIDE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| TRANS-1,2-DICHLOROETHENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| METHYL TERTIARY BUTYL ETHER | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1-DICHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| VINYL ACETATE | ND | | 150 | UG/KG | 50 | 3/20/2016 19:52 |
| CIS-1,2-DICHLOROETHENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 2-BUTANONE | ND | | 740 | UG/KG | 50 | 3/20/2016 19:52 |
| BROMOCHLOROMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| CHLOROFORM | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1,1-TRICHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 2,2-DICHLOROPROPANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| CARBON TETRACHLORIDE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1-DICHLOROPROPENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2-DICHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| BENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| TRICHLOROETHENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2-DICHLOROPROPANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| DIBROMOMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| BROMODICHLOROMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| CIS-1,3-DICHLOROPROPENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 4-METHYL-2-PENTANONE | ND | | 740 | UG/KG | 50 | 3/20/2016 19:52 |
| TOLUENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1,2-TRICHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 2-HEXANONE | ND | | 740 | UG/KG | 50 | 3/20/2016 19:52 |
| TETRACHLOROETHENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,3-DICHLOROPROPANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| DIBROMOCHLOROMETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2-DIBROMOETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1-CHLOROHEXANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB13 (7)
**Legal Location:**
**Collection Date:** 3/15/2016 17:50

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-5
**Matrix:** SOIL
**Percent Moisture:** 17.1

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| ETHYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| M+P-XYLENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| O-XYLENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| STYRENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| BROMOFORM | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| ISOPROPYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2,3-TRICHLOROPROPANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| BROMOBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| N-PROPYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 2-CHLOROTOLUENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 4-CHLOROTOLUENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| TERT-BUTYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| SEC-BUTYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,3-DICHLOROBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| P-ISOPROPYLTOLUENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,4-DICHLOROBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| N-BUTYLBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2-DICHLOROBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 150 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2,4-TRICHLOROBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| HEXACHLOROBUTADIENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| NAPHTHALENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| 1,2,3-TRICHLOROBENZENE | ND | | 74 | UG/KG | 50 | 3/20/2016 19:52 |
| *Surr: DIBROMOFLUOROMETHANE* | *96* | | *80-124* | *%REC* | 50 | 3/20/2016 19:52 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 50 | 3/20/2016 19:52 |
| *Surr: 4-BROMOFLUOROBENZENE* | *100* | | *78-129* | *%REC* | 50 | 3/20/2016 19:52 |
| GASOLINE RANGE ORGANICS | ND | | 7400 | UG/KG | 50 | 3/20/2016 19:52 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB13 (10)
**Legal Location:**
**Collection Date:** 3/15/2016 18:00

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-6
**Matrix:** SOIL
**Percent Moisture:** 11.2

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **3200** | D | **55** | **MG/KG** | 10 | 3/21/2016 17:17 |
| **MOTOR OIL RANGE ORGANICS** | **330** | M | **55** | **MG/KG** | 10 | 3/21/2016 17:17 |
| *Surr: O-TERPHENYL* | *123* | * | *49-114* | *%REC* | 10 | 3/21/2016 17:17 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| CHLOROMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| VINYL CHLORIDE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| BROMOMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| CHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| TRICHLOROFLUOROMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1-DICHLOROETHENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| ACETONE | ND | | 5700 | UG/KG | 500 | 3/26/2016 19:32 |
| IODOMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| CARBON DISULFIDE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| METHYLENE CHLORIDE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| TRANS-1,2-DICHLOROETHENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| METHYL TERTIARY BUTYL ETHER | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1-DICHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| VINYL ACETATE | ND | | 1100 | UG/KG | 500 | 3/26/2016 19:32 |
| CIS-1,2-DICHLOROETHENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 2-BUTANONE | ND | | 5700 | UG/KG | 500 | 3/26/2016 19:32 |
| BROMOCHLOROMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| CHLOROFORM | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1,1-TRICHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 2,2-DICHLOROPROPANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| CARBON TETRACHLORIDE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1-DICHLOROPROPENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,2-DICHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| BENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| TRICHLOROETHENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,2-DICHLOROPROPANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| DIBROMOMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| BROMODICHLOROMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| CIS-1,3-DICHLOROPROPENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 4-METHYL-2-PENTANONE | ND | | 5700 | UG/KG | 500 | 3/26/2016 19:32 |
| TOLUENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1,2-TRICHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 2-HEXANONE | ND | | 5700 | UG/KG | 500 | 3/26/2016 19:32 |
| TETRACHLOROETHENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,3-DICHLOROPROPANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| DIBROMOCHLOROMETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,2-DIBROMOETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1-CHLOROHEXANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB13 (10)
**Legal Location:**
**Collection Date:** 3/15/2016 18:00

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-6
**Matrix:** SOIL
**Percent Moisture:** 11.2

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **ETHYLBENZENE** | **3500** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| **M+P-XYLENE** | **28000** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| O-XYLENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| STYRENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| BROMOFORM | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **ISOPROPYLBENZENE** | **5000** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 1,2,3-TRICHLOROPROPANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| BROMOBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **N-PROPYLBENZENE** | **15000** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 2-CHLOROTOLUENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **1,3,5-TRIMETHYLBENZENE** | **23000** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 4-CHLOROTOLUENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| TERT-BUTYLBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **1,2,4-TRIMETHYLBENZENE** | **75000** | | **5700** | **UG/KG** | 5000 | 3/26/2016 19:53 |
| **SEC-BUTYLBENZENE** | **4400** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 1,3-DICHLOROBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **P-ISOPROPYLTOLUENE** | **3800** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 1,4-DICHLOROBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **N-BUTYLBENZENE** | **16000** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 1,2-DICHLOROBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 1100 | UG/KG | 500 | 3/26/2016 19:32 |
| 1,2,4-TRICHLOROBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| HEXACHLOROBUTADIENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| **NAPHTHALENE** | **25000** | | **570** | **UG/KG** | 500 | 3/26/2016 19:32 |
| 1,2,3-TRICHLOROBENZENE | ND | | 570 | UG/KG | 500 | 3/26/2016 19:32 |
| *Surr: DIBROMOFLUOROMETHANE* | *102* | | *80-124* | *%REC* | 500 | 3/26/2016 19:32 |
| *Surr: DIBROMOFLUOROMETHANE* | *98* | | *80-124* | *%REC* | 5000 | 3/26/2016 19:53 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 500 | 3/26/2016 19:32 |
| *Surr: TOLUENE-D8* | *100* | | *81-119* | *%REC* | 5000 | 3/26/2016 19:53 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *78-129* | *%REC* | 5000 | 3/26/2016 19:53 |
| *Surr: 4-BROMOFLUOROBENZENE* | *103* | | *78-129* | *%REC* | 500 | 3/26/2016 19:32 |
| **GASOLINE RANGE ORGANICS** | **2700000** | | **570000** | **UG/KG** | 5000 | 3/26/2016 19:53 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB14 (7)
**Legal Location:**
**Collection Date:** 3/15/2016 18:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-7
**Matrix:** SOIL
**Percent Moisture:** 6.2

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.3 | MG/KG | 1 | 3/21/2016 17:48 |
| **MOTOR OIL RANGE ORGANICS** | **25** | M | **5.3** | **MG/KG** | 1 | 3/21/2016 17:48 |
| *Surr: O-TERPHENYL* | *77* | | *49-114* | *%REC* | 1 | 3/21/2016 17:48 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| CHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| VINYL CHLORIDE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| BROMOMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| CHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| TRICHLOROFLUOROMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1-DICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| ACETONE | ND | | 540 | UG/KG | 50 | 3/26/2016 02:47 |
| **IODOMETHANE** | **74** | | **54** | **UG/KG** | 50 | 3/26/2016 02:47 |
| CARBON DISULFIDE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| METHYLENE CHLORIDE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| TRANS-1,2-DICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| METHYL TERTIARY BUTYL ETHER | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1-DICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| VINYL ACETATE | ND | | 110 | UG/KG | 50 | 3/26/2016 02:47 |
| CIS-1,2-DICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 2-BUTANONE | ND | | 540 | UG/KG | 50 | 3/26/2016 02:47 |
| BROMOCHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| CHLOROFORM | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1,1-TRICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 2,2-DICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| CARBON TETRACHLORIDE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1-DICHLOROPROPENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2-DICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| BENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| TRICHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2-DICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| DIBROMOMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| BROMODICHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| CIS-1,3-DICHLOROPROPENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 4-METHYL-2-PENTANONE | ND | | 540 | UG/KG | 50 | 3/26/2016 02:47 |
| TOLUENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1,2-TRICHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 2-HEXANONE | ND | | 540 | UG/KG | 50 | 3/26/2016 02:47 |
| TETRACHLOROETHENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,3-DICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| DIBROMOCHLOROMETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2-DIBROMOETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1-CHLOROHEXANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB14 (7)
**Legal Location:**
**Collection Date:** 3/15/2016 18:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-7
**Matrix:** SOIL
**Percent Moisture:** 6.2

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| ETHYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| M+P-XYLENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| O-XYLENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| STYRENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| BROMOFORM | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| ISOPROPYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2,3-TRICHLOROPROPANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| BROMOBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| N-PROPYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 2-CHLOROTOLUENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 4-CHLOROTOLUENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| TERT-BUTYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| SEC-BUTYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,3-DICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| P-ISOPROPYLTOLUENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,4-DICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| N-BUTYLBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2-DICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 110 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2,4-TRICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| HEXACHLOROBUTADIENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| NAPHTHALENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| 1,2,3-TRICHLOROBENZENE | ND | | 54 | UG/KG | 50 | 3/26/2016 02:47 |
| *Surr: DIBROMOFLUOROMETHANE* | *96* | | *80-124* | *%REC* | 50 | 3/26/2016 02:47 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 50 | 3/26/2016 02:47 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 50 | 3/26/2016 02:47 |
| GASOLINE RANGE ORGANICS | ND | | 5400 | UG/KG | 50 | 3/26/2016 02:47 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB14 (14)
**Legal Location:**
**Collection Date:** 3/15/2016 18:50

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-8
**Matrix:** SOIL
**Percent Moisture:** 14.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **6100** | D | **120** | **MG/KG** | 20 | 3/25/2016 12:15 |
| **MOTOR OIL RANGE ORGANICS** | **590** | M | **120** | **MG/KG** | 20 | 3/25/2016 12:15 |
| *Surr: O-TERPHENYL* | *174* | * | *49-114* | *%REC* | 20 | 3/25/2016 12:15 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| CHLOROMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| VINYL CHLORIDE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| BROMOMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| CHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| TRICHLOROFLUOROMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1-DICHLOROETHENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **ACETONE** | **1700** | J | **2400** | **UG/KG** | 200 | 3/26/2016 18:28 |
| IODOMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| CARBON DISULFIDE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| METHYLENE CHLORIDE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| TRANS-1,2-DICHLOROETHENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| METHYL TERTIARY BUTYL ETHER | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1-DICHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| VINYL ACETATE | ND | | 470 | UG/KG | 200 | 3/26/2016 18:28 |
| CIS-1,2-DICHLOROETHENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 2-BUTANONE | ND | | 2400 | UG/KG | 200 | 3/26/2016 18:28 |
| BROMOCHLOROMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| CHLOROFORM | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1,1-TRICHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 2,2-DICHLOROPROPANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| CARBON TETRACHLORIDE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1-DICHLOROPROPENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,2-DICHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| BENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| TRICHLOROETHENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **1,2-DICHLOROPROPANE** | **1200** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| DIBROMOMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| BROMODICHLOROMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| CIS-1,3-DICHLOROPROPENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 4-METHYL-2-PENTANONE | ND | | 2400 | UG/KG | 200 | 3/26/2016 18:28 |
| TOLUENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1,2-TRICHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 2-HEXANONE | ND | | 2400 | UG/KG | 200 | 3/26/2016 18:28 |
| TETRACHLOROETHENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,3-DICHLOROPROPANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| DIBROMOCHLOROMETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,2-DIBROMOETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1-CHLOROHEXANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB14 (14)
**Legal Location:**
**Collection Date:** 3/15/2016 18:50

**Date:** *12-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-8
**Matrix:** SOIL
**Percent Moisture:** 14.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **ETHYLBENZENE** | **3400** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| **M+P-XYLENE** | **1700** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| **O-XYLENE** | **320** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| STYRENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| BROMOFORM | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **ISOPROPYLBENZENE** | **16000** | | **2400** | **UG/KG** | 2000 | 3/26/2016 18:50 |
| 1,2,3-TRICHLOROPROPANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| BROMOBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **N-PROPYLBENZENE** | **46000** | | **2400** | **UG/KG** | 2000 | 3/26/2016 18:50 |
| 2-CHLOROTOLUENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 4-CHLOROTOLUENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **TERT-BUTYLBENZENE** | **270** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| **1,2,4-TRIMETHYLBENZENE** | **180000** | J | **12000** | **UG/KG** | 10000 | 4/8/2016 13:25 |
| **SEC-BUTYLBENZENE** | **12000** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| 1,3-DICHLOROBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **P-ISOPROPYLTOLUENE** | **8900** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| 1,4-DICHLOROBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **N-BUTYLBENZENE** | **15000** | | **2400** | **UG/KG** | 2000 | 3/26/2016 18:50 |
| 1,2-DICHLOROBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 470 | UG/KG | 200 | 3/26/2016 18:28 |
| 1,2,4-TRICHLOROBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| HEXACHLOROBUTADIENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| **NAPHTHALENE** | **790** | | **240** | **UG/KG** | 200 | 3/26/2016 18:28 |
| 1,2,3-TRICHLOROBENZENE | ND | | 240 | UG/KG | 200 | 3/26/2016 18:28 |
| *Surr: DIBROMOFLUOROMETHANE* | *101* | | *80-124* | *%REC* | 10000 | 4/8/2016 13:25 |
| *Surr: DIBROMOFLUOROMETHANE* | *98* | | *80-124* | *%REC* | 2000 | 3/26/2016 18:50 |
| *Surr: DIBROMOFLUOROMETHANE* | *100* | | *80-124* | *%REC* | 200 | 3/26/2016 18:28 |
| *Surr: TOLUENE-D8* | *101* | | *81-119* | *%REC* | 10000 | 4/8/2016 13:25 |
| *Surr: TOLUENE-D8* | *104* | | *81-119* | *%REC* | 2000 | 3/26/2016 18:50 |
| *Surr: TOLUENE-D8* | *132* | * | *81-119* | *%REC* | 200 | 3/26/2016 18:28 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 10000 | 4/8/2016 13:25 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *78-129* | *%REC* | 2000 | 3/26/2016 18:50 |
| *Surr: 4-BROMOFLUOROBENZENE* | *130* | * | *78-129* | *%REC* | 200 | 3/26/2016 18:28 |
| **GASOLINE RANGE ORGANICS** | **5300000** | | **240000** | **UG/KG** | 2000 | 3/26/2016 18:50 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB15 (9)
**Legal Location:**
**Collection Date:** 3/15/2016 19:10

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-9
**Matrix:** SOIL
**Percent Moisture:** 2.0

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.1 | MG/KG | 1 | 3/25/2016 12:46 |
| MOTOR OIL RANGE ORGANICS | ND | | 5.1 | MG/KG | 1 | 3/25/2016 12:46 |
| *Surr: O-TERPHENYL* | *76* | | *49-114* | *%REC* | 1 | 3/25/2016 12:46 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| CHLOROMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| VINYL CHLORIDE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| BROMOMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| CHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| TRICHLOROFLUOROMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1-DICHLOROETHENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| ACETONE | ND | | 530 | UG/KG | 50 | 3/26/2016 03:08 |
| **IODOMETHANE** | **74** | | **53** | **UG/KG** | 50 | 3/26/2016 03:08 |
| CARBON DISULFIDE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| METHYLENE CHLORIDE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| TRANS-1,2-DICHLOROETHENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| METHYL TERTIARY BUTYL ETHER | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1-DICHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| VINYL ACETATE | ND | | 110 | UG/KG | 50 | 3/26/2016 03:08 |
| CIS-1,2-DICHLOROETHENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 2-BUTANONE | ND | | 530 | UG/KG | 50 | 3/26/2016 03:08 |
| BROMOCHLOROMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| CHLOROFORM | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1,1-TRICHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 2,2-DICHLOROPROPANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| CARBON TETRACHLORIDE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1-DICHLOROPROPENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2-DICHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| BENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| TRICHLOROETHENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2-DICHLOROPROPANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| DIBROMOMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| BROMODICHLOROMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| CIS-1,3-DICHLOROPROPENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 4-METHYL-2-PENTANONE | ND | | 530 | UG/KG | 50 | 3/26/2016 03:08 |
| TOLUENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1,2-TRICHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 2-HEXANONE | ND | | 530 | UG/KG | 50 | 3/26/2016 03:08 |
| TETRACHLOROETHENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,3-DICHLOROPROPANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| DIBROMOCHLOROMETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2-DIBROMOETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1-CHLOROHEXANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB15 (9)
**Legal Location:**
**Collection Date:** 3/15/2016 19:10

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-9
**Matrix:** SOIL
**Percent Moisture:** 2.0

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| ETHYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| M+P-XYLENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| O-XYLENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| STYRENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| BROMOFORM | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| ISOPROPYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2,3-TRICHLOROPROPANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| BROMOBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| N-PROPYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 2-CHLOROTOLUENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 4-CHLOROTOLUENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| TERT-BUTYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| SEC-BUTYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,3-DICHLOROBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| P-ISOPROPYLTOLUENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,4-DICHLOROBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| N-BUTYLBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2-DICHLOROBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 110 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2,4-TRICHLOROBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| HEXACHLOROBUTADIENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| NAPHTHALENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| 1,2,3-TRICHLOROBENZENE | ND | | 53 | UG/KG | 50 | 3/26/2016 03:08 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 03:08 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 50 | 3/26/2016 03:08 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *78-129* | *%REC* | 50 | 3/26/2016 03:08 |
| GASOLINE RANGE ORGANICS | ND | | 5300 | UG/KG | 50 | 3/26/2016 03:08 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB15 (13)
**Legal Location:**
**Collection Date:** 3/15/2016 19:20

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-10
**Matrix:** SOIL
**Percent Moisture:** 13.6

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **48** | D | **5.8** | **MG/KG** | 1 | 3/21/2016 19:52 |
| **MOTOR OIL RANGE ORGANICS** | **68** | M | **5.8** | **MG/KG** | 1 | 3/21/2016 19:52 |
| *Surr: O-TERPHENYL* | *77* | | *49-114* | *%REC* | 1 | 3/21/2016 19:52 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| CHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| VINYL CHLORIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| BROMOMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| CHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| TRICHLOROFLUOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1-DICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| ACETONE | ND | | 680 | UG/KG | 50 | 3/26/2016 03:30 |
| **IODOMETHANE** | **89** | | **68** | **UG/KG** | 50 | 3/26/2016 03:30 |
| CARBON DISULFIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| METHYLENE CHLORIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| TRANS-1,2-DICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| METHYL TERTIARY BUTYL ETHER | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1-DICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| VINYL ACETATE | ND | | 140 | UG/KG | 50 | 3/26/2016 03:30 |
| CIS-1,2-DICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 2-BUTANONE | ND | | 680 | UG/KG | 50 | 3/26/2016 03:30 |
| BROMOCHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| CHLOROFORM | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1,1-TRICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 2,2-DICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| CARBON TETRACHLORIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1-DICHLOROPROPENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2-DICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| BENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| TRICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2-DICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| DIBROMOMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| BROMODICHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| CIS-1,3-DICHLOROPROPENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 4-METHYL-2-PENTANONE | ND | | 680 | UG/KG | 50 | 3/26/2016 03:30 |
| TOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1,2-TRICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 2-HEXANONE | ND | | 680 | UG/KG | 50 | 3/26/2016 03:30 |
| TETRACHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,3-DICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| DIBROMOCHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2-DIBROMOETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1-CHLOROHEXANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB15 (13)
**Legal Location:**
**Collection Date:** 3/15/2016 19:20

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-10
**Matrix:** SOIL
**Percent Moisture:** 13.6

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| ETHYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| M+P-XYLENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| O-XYLENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| STYRENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| BROMOFORM | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| ISOPROPYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2,3-TRICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| BROMOBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| N-PROPYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 2-CHLOROTOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 4-CHLOROTOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| TERT-BUTYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| SEC-BUTYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,3-DICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| P-ISOPROPYLTOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,4-DICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| N-BUTYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2-DICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 140 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2,4-TRICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| HEXACHLOROBUTADIENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| NAPHTHALENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| 1,2,3-TRICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 03:30 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 03:30 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 50 | 3/26/2016 03:30 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *78-129* | *%REC* | 50 | 3/26/2016 03:30 |
| GASOLINE RANGE ORGANICS | ND | | 6800 | UG/KG | 50 | 3/26/2016 03:30 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB16 (5)
**Legal Location:**
**Collection Date:** 3/15/2016 11:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-11
**Matrix:** SOIL
**Percent Moisture:** 12.7

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.6 | MG/KG | 1 | 3/21/2016 20:23 |
| **MOTOR OIL RANGE ORGANICS** | **3.9** | J | **5.6** | **MG/KG** | 1 | 3/21/2016 20:23 |
| *Surr: O-TERPHENYL* | *75* | | *49-114* | *%REC* | 1 | 3/21/2016 20:23 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| CHLOROMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| VINYL CHLORIDE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| BROMOMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| CHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| TRICHLOROFLUOROMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1-DICHLOROETHENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| ACETONE | ND | | 560 | UG/KG | 50 | 3/26/2016 03:51 |
| **IODOMETHANE** | **74** | | **56** | **UG/KG** | 50 | 3/26/2016 03:51 |
| CARBON DISULFIDE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| METHYLENE CHLORIDE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| TRANS-1,2-DICHLOROETHENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| METHYL TERTIARY BUTYL ETHER | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1-DICHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| VINYL ACETATE | ND | | 110 | UG/KG | 50 | 3/26/2016 03:51 |
| CIS-1,2-DICHLOROETHENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 2-BUTANONE | ND | | 560 | UG/KG | 50 | 3/26/2016 03:51 |
| BROMOCHLOROMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| CHLOROFORM | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1,1-TRICHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 2,2-DICHLOROPROPANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| CARBON TETRACHLORIDE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1-DICHLOROPROPENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2-DICHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| BENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| TRICHLOROETHENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2-DICHLOROPROPANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| DIBROMOMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| BROMODICHLOROMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| CIS-1,3-DICHLOROPROPENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 4-METHYL-2-PENTANONE | ND | | 560 | UG/KG | 50 | 3/26/2016 03:51 |
| TOLUENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1,2-TRICHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 2-HEXANONE | ND | | 560 | UG/KG | 50 | 3/26/2016 03:51 |
| TETRACHLOROETHENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,3-DICHLOROPROPANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| DIBROMOCHLOROMETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2-DIBROMOETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1-CHLOROHEXANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB16 (5)
**Legal Location:**
**Collection Date:** 3/15/2016 11:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-11
**Matrix:** SOIL
**Percent Moisture:** 12.7

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| ETHYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| M+P-XYLENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| O-XYLENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| STYRENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| BROMOFORM | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| ISOPROPYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2,3-TRICHLOROPROPANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| BROMOBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| N-PROPYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 2-CHLOROTOLUENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 4-CHLOROTOLUENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| TERT-BUTYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| SEC-BUTYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,3-DICHLOROBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| P-ISOPROPYLTOLUENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,4-DICHLOROBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| N-BUTYLBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2-DICHLOROBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 110 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2,4-TRICHLOROBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| HEXACHLOROBUTADIENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| NAPHTHALENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| 1,2,3-TRICHLOROBENZENE | ND | | 56 | UG/KG | 50 | 3/26/2016 03:51 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 03:51 |
| *Surr: TOLUENE-D8* | *103* | | *81-119* | *%REC* | 50 | 3/26/2016 03:51 |
| *Surr: 4-BROMOFLUOROBENZENE* | *97* | | *78-129* | *%REC* | 50 | 3/26/2016 03:51 |
| GASOLINE RANGE ORGANICS | ND | | 5600 | UG/KG | 50 | 3/26/2016 03:51 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB16 (10)
**Legal Location:**
**Collection Date:** 3/15/2016 11:45

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-12
**Matrix:** SOIL
**Percent Moisture:** 11.6

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5.6 | MG/KG | 1 | 3/21/2016 21:24 |
| **MOTOR OIL RANGE ORGANICS** | **1.9** | J | **5.6** | **MG/KG** | 1 | 3/21/2016 21:24 |
| *Surr: O-TERPHENYL* | *80* | | *49-114* | *%REC* | 1 | 3/21/2016 21:24 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| CHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| VINYL CHLORIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| BROMOMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| CHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| TRICHLOROFLUOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| ACETONE | ND | | 580 | UG/KG | 50 | 3/26/2016 04:12 |
| **IODOMETHANE** | **76** | | **58** | **UG/KG** | 50 | 3/26/2016 04:12 |
| CARBON DISULFIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| METHYLENE CHLORIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| TRANS-1,2-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| METHYL TERTIARY BUTYL ETHER | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1-DICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/26/2016 04:12 |
| CIS-1,2-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 2-BUTANONE | ND | | 580 | UG/KG | 50 | 3/26/2016 04:12 |
| BROMOCHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| CHLOROFORM | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1,1-TRICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 2,2-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| CARBON TETRACHLORIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2-DICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| BENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| TRICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| DIBROMOMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| BROMODICHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| CIS-1,3-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 4-METHYL-2-PENTANONE | ND | | 580 | UG/KG | 50 | 3/26/2016 04:12 |
| TOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1,2-TRICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 2-HEXANONE | ND | | 580 | UG/KG | 50 | 3/26/2016 04:12 |
| TETRACHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,3-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| DIBROMOCHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2-DIBROMOETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1-CHLOROHEXANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB16 (10)
**Legal Location:**
**Collection Date:** 3/15/2016 11:45

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-12
**Matrix:** SOIL
**Percent Moisture:** 11.6

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| ETHYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| M+P-XYLENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| O-XYLENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| STYRENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| BROMOFORM | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| ISOPROPYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2,3-TRICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| BROMOBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| N-PROPYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 2-CHLOROTOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 4-CHLOROTOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| TERT-BUTYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| SEC-BUTYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,3-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| P-ISOPROPYLTOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,4-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| N-BUTYLBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2,4-TRICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| HEXACHLOROBUTADIENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| NAPHTHALENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| 1,2,3-TRICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 04:12 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 04:12 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 50 | 3/26/2016 04:12 |
| *Surr: 4-BROMOFLUOROBENZENE* | *100* | | *78-129* | *%REC* | 50 | 3/26/2016 04:12 |
| GASOLINE RANGE ORGANICS | ND | | 5800 | UG/KG | 50 | 3/26/2016 04:12 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB17 (5)
**Legal Location:**
**Collection Date:** 3/15/2016 12:10

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-13
**Matrix:** SOIL
**Percent Moisture:** 16.5

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **2.6** | J | **6** | **MG/KG** | 1 | 3/21/2016 21:55 |
| **MOTOR OIL RANGE ORGANICS** | **26** | M | **6** | **MG/KG** | 1 | 3/21/2016 21:55 |
| *Surr: O-TERPHENYL* | *82* | | *49-114* | *%REC* | 1 | 3/21/2016 21:55 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| CHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| VINYL CHLORIDE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| BROMOMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| CHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| TRICHLOROFLUOROMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1-DICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| ACETONE | ND | | 590 | UG/KG | 50 | 3/26/2016 04:33 |
| **IODOMETHANE** | **76** | | **59** | **UG/KG** | 50 | 3/26/2016 04:33 |
| CARBON DISULFIDE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| METHYLENE CHLORIDE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| TRANS-1,2-DICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| METHYL TERTIARY BUTYL ETHER | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1-DICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/26/2016 04:33 |
| CIS-1,2-DICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 2-BUTANONE | ND | | 590 | UG/KG | 50 | 3/26/2016 04:33 |
| BROMOCHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| CHLOROFORM | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1,1-TRICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 2,2-DICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| CARBON TETRACHLORIDE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1-DICHLOROPROPENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2-DICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| BENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| TRICHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2-DICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| DIBROMOMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| BROMODICHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| CIS-1,3-DICHLOROPROPENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 4-METHYL-2-PENTANONE | ND | | 590 | UG/KG | 50 | 3/26/2016 04:33 |
| TOLUENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1,2-TRICHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 2-HEXANONE | ND | | 590 | UG/KG | 50 | 3/26/2016 04:33 |
| TETRACHLOROETHENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,3-DICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| DIBROMOCHLOROMETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2-DIBROMOETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1-CHLOROHEXANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB17 (5)
**Legal Location:**
**Collection Date:** 3/15/2016 12:10

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-13
**Matrix:** SOIL
**Percent Moisture:** 16.5

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| ETHYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| M+P-XYLENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| O-XYLENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| STYRENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| BROMOFORM | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| ISOPROPYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2,3-TRICHLOROPROPANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| BROMOBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| N-PROPYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 2-CHLOROTOLUENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 4-CHLOROTOLUENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| TERT-BUTYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| SEC-BUTYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,3-DICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| P-ISOPROPYLTOLUENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,4-DICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| N-BUTYLBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2-DICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2,4-TRICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| HEXACHLOROBUTADIENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| NAPHTHALENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| 1,2,3-TRICHLOROBENZENE | ND | | 59 | UG/KG | 50 | 3/26/2016 04:33 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 04:33 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 50 | 3/26/2016 04:33 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *78-129* | *%REC* | 50 | 3/26/2016 04:33 |
| GASOLINE RANGE ORGANICS | ND | | 5900 | UG/KG | 50 | 3/26/2016 04:33 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB17 (8)
**Legal Location:**
**Collection Date:** 3/15/2016 12:15

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-14
**Matrix:** SOIL
**Percent Moisture:** 24.0

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **6.7** | D | **6.5** | **MG/KG** | 1 | 3/21/2016 22:26 |
| **MOTOR OIL RANGE ORGANICS** | **3.2** | J | **6.5** | **MG/KG** | 1 | 3/21/2016 22:26 |
| *Surr: O-TERPHENYL* | *86* | | *49-114* | *%REC* | 1 | 3/21/2016 22:26 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/25/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| CHLOROMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| VINYL CHLORIDE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| BROMOMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| CHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| TRICHLOROFLUOROMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1-DICHLOROETHENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| ACETONE | ND | | 820 | UG/KG | 50 | 3/26/2016 04:54 |
| **IODOMETHANE** | **110** | | **82** | **UG/KG** | 50 | 3/26/2016 04:54 |
| CARBON DISULFIDE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| METHYLENE CHLORIDE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| TRANS-1,2-DICHLOROETHENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| METHYL TERTIARY BUTYL ETHER | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1-DICHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| VINYL ACETATE | ND | | 160 | UG/KG | 50 | 3/26/2016 04:54 |
| CIS-1,2-DICHLOROETHENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 2-BUTANONE | ND | | 820 | UG/KG | 50 | 3/26/2016 04:54 |
| BROMOCHLOROMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| CHLOROFORM | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1,1-TRICHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 2,2-DICHLOROPROPANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| CARBON TETRACHLORIDE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1-DICHLOROPROPENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2-DICHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| BENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| TRICHLOROETHENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2-DICHLOROPROPANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| DIBROMOMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| BROMODICHLOROMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| CIS-1,3-DICHLOROPROPENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 4-METHYL-2-PENTANONE | ND | | 820 | UG/KG | 50 | 3/26/2016 04:54 |
| TOLUENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1,2-TRICHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 2-HEXANONE | ND | | 820 | UG/KG | 50 | 3/26/2016 04:54 |
| TETRACHLOROETHENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,3-DICHLOROPROPANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| DIBROMOCHLOROMETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2-DIBROMOETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1-CHLOROHEXANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB17 (8)
**Legal Location:**
**Collection Date:** 3/15/2016 12:15

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-14
**Matrix:** SOIL
**Percent Moisture:** 24.0

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| ETHYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| M+P-XYLENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| O-XYLENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| STYRENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| BROMOFORM | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| ISOPROPYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2,3-TRICHLOROPROPANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| BROMOBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| N-PROPYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 2-CHLOROTOLUENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 4-CHLOROTOLUENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| TERT-BUTYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| SEC-BUTYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,3-DICHLOROBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| P-ISOPROPYLTOLUENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,4-DICHLOROBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| N-BUTYLBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2-DICHLOROBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 160 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2,4-TRICHLOROBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| HEXACHLOROBUTADIENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| NAPHTHALENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| 1,2,3-TRICHLOROBENZENE | ND | | 82 | UG/KG | 50 | 3/26/2016 04:54 |
| *Surr: DIBROMOFLUOROMETHANE* | *96* | | *80-124* | *%REC* | 50 | 3/26/2016 04:54 |
| *Surr: TOLUENE-D8* | *101* | | *81-119* | *%REC* | 50 | 3/26/2016 04:54 |
| *Surr: 4-BROMOFLUOROBENZENE* | *97* | | *78-129* | *%REC* | 50 | 3/26/2016 04:54 |
| GASOLINE RANGE ORGANICS | ND | | 8200 | UG/KG | 50 | 3/26/2016 04:54 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB18 (8)
**Legal Location:**
**Collection Date:** 3/15/2016 12:45

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-15
**Matrix:** SOIL
**Percent Moisture:** 11.8

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **38** | D | **5.6** | **MG/KG** | 1 | 3/21/2016 22:57 |
| **MOTOR OIL RANGE ORGANICS** | **26** | M | **5.6** | **MG/KG** | 1 | 3/21/2016 22:57 |
| *Surr: O-TERPHENYL* | *79* | | *49-114* | *%REC* | 1 | 3/21/2016 22:57 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| CHLOROMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| VINYL CHLORIDE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| BROMOMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| CHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| TRICHLOROFLUOROMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1-DICHLOROETHENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| ACETONE | ND | | 620 | UG/KG | 50 | 3/26/2016 14:54 |
| **IODOMETHANE** | **81** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| CARBON DISULFIDE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| METHYLENE CHLORIDE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| TRANS-1,2-DICHLOROETHENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| METHYL TERTIARY BUTYL ETHER | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1-DICHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/26/2016 14:54 |
| CIS-1,2-DICHLOROETHENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 2-BUTANONE | ND | | 620 | UG/KG | 50 | 3/26/2016 14:54 |
| BROMOCHLOROMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| CHLOROFORM | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1,1-TRICHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 2,2-DICHLOROPROPANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| CARBON TETRACHLORIDE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1-DICHLOROPROPENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,2-DICHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **BENZENE** | **190** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| TRICHLOROETHENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,2-DICHLOROPROPANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| DIBROMOMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| BROMODICHLOROMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| CIS-1,3-DICHLOROPROPENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 4-METHYL-2-PENTANONE | ND | | 620 | UG/KG | 50 | 3/26/2016 14:54 |
| TOLUENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1,2-TRICHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 2-HEXANONE | ND | | 620 | UG/KG | 50 | 3/26/2016 14:54 |
| TETRACHLOROETHENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,3-DICHLOROPROPANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| DIBROMOCHLOROMETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,2-DIBROMOETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1-CHLOROHEXANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB18 (8)
**Legal Location:**
**Collection Date:** 3/15/2016 12:45

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-15
**Matrix:** SOIL
**Percent Moisture:** 11.8

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **ETHYLBENZENE** | **760** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| **M+P-XYLENE** | **1300** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| **O-XYLENE** | **23** | J | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| STYRENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| BROMOFORM | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **ISOPROPYLBENZENE** | **98** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 1,2,3-TRICHLOROPROPANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| BROMOBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **N-PROPYLBENZENE** | **330** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 2-CHLOROTOLUENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **1,3,5-TRIMETHYLBENZENE** | **270** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 4-CHLOROTOLUENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| TERT-BUTYLBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **1,2,4-TRIMETHYLBENZENE** | **1600** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| **SEC-BUTYLBENZENE** | **46** | J | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 1,3-DICHLOROBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **P-ISOPROPYLTOLUENE** | **41** | J | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 1,4-DICHLOROBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **N-BUTYLBENZENE** | **99** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 1,2-DICHLOROBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/26/2016 14:54 |
| 1,2,4-TRICHLOROBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| HEXACHLOROBUTADIENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| **NAPHTHALENE** | **1400** | | **62** | **UG/KG** | 50 | 3/26/2016 14:54 |
| 1,2,3-TRICHLOROBENZENE | ND | | 62 | UG/KG | 50 | 3/26/2016 14:54 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 14:54 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 50 | 3/26/2016 14:54 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 50 | 3/26/2016 14:54 |
| **GASOLINE RANGE ORGANICS** | **11000** | | **6200** | **UG/KG** | 50 | 3/26/2016 14:54 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB18 (12)
**Legal Location:**
**Collection Date:** 3/15/2016 13:00

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-16
**Matrix:** SOIL
**Percent Moisture:** 14.7

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **580** | D | **12** | **MG/KG** | 2 | 3/25/2016 13:17 |
| **MOTOR OIL RANGE ORGANICS** | **62** | M | **12** | **MG/KG** | 2 | 3/25/2016 13:17 |
| *Surr: O-TERPHENYL* | *85* | | *49-114* | *%REC* | 2 | 3/25/2016 13:17 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| CHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| VINYL CHLORIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| BROMOMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| CHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| TRICHLOROFLUOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| ACETONE | ND | | 580 | UG/KG | 50 | 3/26/2016 16:21 |
| **IODOMETHANE** | **75** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| CARBON DISULFIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| METHYLENE CHLORIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| TRANS-1,2-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| METHYL TERTIARY BUTYL ETHER | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1-DICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| VINYL ACETATE | ND | | 120 | UG/KG | 50 | 3/26/2016 16:21 |
| CIS-1,2-DICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 2-BUTANONE | ND | | 580 | UG/KG | 50 | 3/26/2016 16:21 |
| BROMOCHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| CHLOROFORM | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1,1-TRICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 2,2-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| CARBON TETRACHLORIDE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,2-DICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **BENZENE** | **310** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| TRICHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **1,2-DICHLOROPROPANE** | **100** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| DIBROMOMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| BROMODICHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| CIS-1,3-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 4-METHYL-2-PENTANONE | ND | | 580 | UG/KG | 50 | 3/26/2016 16:21 |
| TOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1,2-TRICHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 2-HEXANONE | ND | | 580 | UG/KG | 50 | 3/26/2016 16:21 |
| TETRACHLOROETHENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,3-DICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| DIBROMOCHLOROMETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,2-DIBROMOETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1-CHLOROHEXANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB18 (12)
**Legal Location:**
**Collection Date:** 3/15/2016 13:00

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-16
**Matrix:** SOIL
**Percent Moisture:** 14.7

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **ETHYLBENZENE** | **5800** | | **580** | **UG/KG** | 500 | 3/26/2016 16:42 |
| **M+P-XYLENE** | **20000** | | **580** | **UG/KG** | 500 | 3/26/2016 16:42 |
| **O-XYLENE** | **230** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| STYRENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| BROMOFORM | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **ISOPROPYLBENZENE** | **880** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| 1,2,3-TRICHLOROPROPANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| BROMOBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **N-PROPYLBENZENE** | **3300** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| 2-CHLOROTOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **1,3,5-TRIMETHYLBENZENE** | **4900** | | **580** | **UG/KG** | 500 | 3/26/2016 16:42 |
| 4-CHLOROTOLUENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **TERT-BUTYLBENZENE** | **19** | J | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| **1,2,4-TRIMETHYLBENZENE** | **16000** | | **580** | **UG/KG** | 500 | 3/26/2016 16:42 |
| **SEC-BUTYLBENZENE** | **900** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| 1,3-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **P-ISOPROPYLTOLUENE** | **750** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| 1,4-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **N-BUTYLBENZENE** | **3300** | | **58** | **UG/KG** | 50 | 3/26/2016 16:21 |
| 1,2-DICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 120 | UG/KG | 50 | 3/26/2016 16:21 |
| 1,2,4-TRICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| HEXACHLOROBUTADIENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| **NAPHTHALENE** | **6700** | | **580** | **UG/KG** | 500 | 3/26/2016 16:42 |
| 1,2,3-TRICHLOROBENZENE | ND | | 58 | UG/KG | 50 | 3/26/2016 16:21 |
| *Surr: DIBROMOFLUOROMETHANE* | *98* | | *80-124* | *%REC* | 50 | 3/26/2016 16:21 |
| *Surr: DIBROMOFLUOROMETHANE* | *98* | | *80-124* | *%REC* | 500 | 3/26/2016 16:42 |
| *Surr: TOLUENE-D8* | *116* | | *81-119* | *%REC* | 50 | 3/26/2016 16:21 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 500 | 3/26/2016 16:42 |
| *Surr: 4-BROMOFLUOROBENZENE* | *97* | | *78-129* | *%REC* | 500 | 3/26/2016 16:42 |
| *Surr: 4-BROMOFLUOROBENZENE* | *106* | | *78-129* | *%REC* | 50 | 3/26/2016 16:21 |
| **GASOLINE RANGE ORGANICS** | **730000** | | **58000** | **UG/KG** | 500 | 3/26/2016 16:42 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB19 (8)
**Legal Location:**
**Collection Date:** 3/15/2016 13:15

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-17
**Matrix:** SOIL
**Percent Moisture:** 7.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **4.4** | J | **5.4** | **MG/KG** | 1 | 3/21/2016 23:59 |
| **MOTOR OIL RANGE ORGANICS** | **8.2** | M | **5.4** | **MG/KG** | 1 | 3/21/2016 23:59 |
| *Surr: O-TERPHENYL* | *77* | | *49-114* | *%REC* | 1 | 3/21/2016 23:59 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| CHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| VINYL CHLORIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| BROMOMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| CHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| TRICHLOROFLUOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1-DICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| ACETONE | ND | | 680 | UG/KG | 50 | 3/26/2016 15:15 |
| **IODOMETHANE** | **87** | | **68** | **UG/KG** | 50 | 3/26/2016 15:15 |
| CARBON DISULFIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| METHYLENE CHLORIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| TRANS-1,2-DICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| METHYL TERTIARY BUTYL ETHER | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1-DICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| VINYL ACETATE | ND | | 140 | UG/KG | 50 | 3/26/2016 15:15 |
| CIS-1,2-DICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 2-BUTANONE | ND | | 680 | UG/KG | 50 | 3/26/2016 15:15 |
| BROMOCHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| CHLOROFORM | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1,1-TRICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 2,2-DICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| CARBON TETRACHLORIDE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1-DICHLOROPROPENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2-DICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| BENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| TRICHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2-DICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| DIBROMOMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| BROMODICHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| CIS-1,3-DICHLOROPROPENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 4-METHYL-2-PENTANONE | ND | | 680 | UG/KG | 50 | 3/26/2016 15:15 |
| TOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1,2-TRICHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 2-HEXANONE | ND | | 680 | UG/KG | 50 | 3/26/2016 15:15 |
| TETRACHLOROETHENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,3-DICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| DIBROMOCHLOROMETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2-DIBROMOETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1-CHLOROHEXANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB19 (8)
**Legal Location:**
**Collection Date:** 3/15/2016 13:15

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-17
**Matrix:** SOIL
**Percent Moisture:** 7.9

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| ETHYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| M+P-XYLENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| O-XYLENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| STYRENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| BROMOFORM | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| ISOPROPYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2,3-TRICHLOROPROPANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| BROMOBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| N-PROPYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 2-CHLOROTOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 4-CHLOROTOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| TERT-BUTYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| SEC-BUTYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,3-DICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| P-ISOPROPYLTOLUENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,4-DICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| N-BUTYLBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2-DICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 140 | UG/KG | 50 | 3/26/2016 15:15 |
| 1,2,4-TRICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| HEXACHLOROBUTADIENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| **NAPHTHALENE** | **97** | | **68** | **UG/KG** | 50 | 3/26/2016 15:15 |
| 1,2,3-TRICHLOROBENZENE | ND | | 68 | UG/KG | 50 | 3/26/2016 15:15 |
| *Surr: DIBROMOFLUOROMETHANE* | *95* | | *80-124* | *%REC* | 50 | 3/26/2016 15:15 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 50 | 3/26/2016 15:15 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 50 | 3/26/2016 15:15 |
| GASOLINE RANGE ORGANICS | ND | | 6800 | UG/KG | 50 | 3/26/2016 15:15 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB20 (3)
**Legal Location:**
**Collection Date:** 3/15/2016 14:15

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-18
**Matrix:** SOIL
**Percent Moisture:** 1.4

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 5 | MG/KG | 1 | 3/22/2016 00:29 |
| **MOTOR OIL RANGE ORGANICS** | **6.1** | M | **5** | **MG/KG** | 1 | 3/22/2016 00:29 |
| *Surr: O-TERPHENYL* | *72* | | *49-114* | *%REC* | 1 | 3/22/2016 00:29 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| CHLOROMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| VINYL CHLORIDE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| BROMOMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| CHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| TRICHLOROFLUOROMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1-DICHLOROETHENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| ACETONE | ND | | 520 | UG/KG | 50 | 3/26/2016 15:36 |
| **IODOMETHANE** | **68** | | **52** | **UG/KG** | 50 | 3/26/2016 15:36 |
| CARBON DISULFIDE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| METHYLENE CHLORIDE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| TRANS-1,2-DICHLOROETHENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| METHYL TERTIARY BUTYL ETHER | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1-DICHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| VINYL ACETATE | ND | | 100 | UG/KG | 50 | 3/26/2016 15:36 |
| CIS-1,2-DICHLOROETHENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 2-BUTANONE | ND | | 520 | UG/KG | 50 | 3/26/2016 15:36 |
| BROMOCHLOROMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| CHLOROFORM | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1,1-TRICHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 2,2-DICHLOROPROPANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| CARBON TETRACHLORIDE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1-DICHLOROPROPENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2-DICHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| BENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| TRICHLOROETHENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2-DICHLOROPROPANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| DIBROMOMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| BROMODICHLOROMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| CIS-1,3-DICHLOROPROPENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 4-METHYL-2-PENTANONE | ND | | 520 | UG/KG | 50 | 3/26/2016 15:36 |
| TOLUENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1,2-TRICHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 2-HEXANONE | ND | | 520 | UG/KG | 50 | 3/26/2016 15:36 |
| TETRACHLOROETHENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,3-DICHLOROPROPANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| DIBROMOCHLOROMETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2-DIBROMOETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1-CHLOROHEXANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB20 (3)
**Legal Location:**
**Collection Date:** 3/15/2016 14:15

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-18
**Matrix:** SOIL
**Percent Moisture:** 1.4

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| ETHYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| M+P-XYLENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| O-XYLENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| STYRENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| BROMOFORM | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| ISOPROPYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2,3-TRICHLOROPROPANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| BROMOBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| N-PROPYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 2-CHLOROTOLUENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 4-CHLOROTOLUENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| TERT-BUTYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| SEC-BUTYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,3-DICHLOROBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| P-ISOPROPYLTOLUENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,4-DICHLOROBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| N-BUTYLBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2-DICHLOROBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 100 | UG/KG | 50 | 3/26/2016 15:36 |
| 1,2,4-TRICHLOROBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| HEXACHLOROBUTADIENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| **NAPHTHALENE** | **61** | | **52** | **UG/KG** | 50 | 3/26/2016 15:36 |
| 1,2,3-TRICHLOROBENZENE | ND | | 52 | UG/KG | 50 | 3/26/2016 15:36 |
| *Surr: DIBROMOFLUOROMETHANE* | *94* | | *80-124* | *%REC* | 50 | 3/26/2016 15:36 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 50 | 3/26/2016 15:36 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *78-129* | *%REC* | 50 | 3/26/2016 15:36 |
| GASOLINE RANGE ORGANICS | ND | | 5200 | UG/KG | 50 | 3/26/2016 15:36 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB19 (14)
**Legal Location:**
**Collection Date:** 3/15/2016 13:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-19
**Matrix:** SOIL
**Percent Moisture:** 15.0

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **430** | D | **5.7** | **MG/KG** | 1 | 3/22/2016 01:31 |
| **MOTOR OIL RANGE ORGANICS** | **27** | M | **5.7** | **MG/KG** | 1 | 3/22/2016 01:31 |
| *Surr: O-TERPHENYL* | *81* | | *49-114* | *%REC* | 1 | 3/22/2016 01:31 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| CHLOROMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| VINYL CHLORIDE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| BROMOMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| CHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| TRICHLOROFLUOROMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1-DICHLOROETHENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **ACETONE** | **220** | J | **630** | **UG/KG** | 50 | 3/26/2016 17:24 |
| **IODOMETHANE** | **83** | | **63** | **UG/KG** | 50 | 3/26/2016 17:24 |
| CARBON DISULFIDE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| METHYLENE CHLORIDE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| TRANS-1,2-DICHLOROETHENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| METHYL TERTIARY BUTYL ETHER | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1-DICHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| VINYL ACETATE | ND | | 130 | UG/KG | 50 | 3/26/2016 17:24 |
| CIS-1,2-DICHLOROETHENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 2-BUTANONE | ND | | 630 | UG/KG | 50 | 3/26/2016 17:24 |
| BROMOCHLOROMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| CHLOROFORM | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1,1-TRICHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 2,2-DICHLOROPROPANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| CARBON TETRACHLORIDE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1-DICHLOROPROPENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,2-DICHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **BENZENE** | **4900** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| TRICHLOROETHENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,2-DICHLOROPROPANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| DIBROMOMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| BROMODICHLOROMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| CIS-1,3-DICHLOROPROPENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 4-METHYL-2-PENTANONE | ND | | 630 | UG/KG | 50 | 3/26/2016 17:24 |
| TOLUENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1,2-TRICHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 2-HEXANONE | ND | | 630 | UG/KG | 50 | 3/26/2016 17:24 |
| TETRACHLOROETHENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,3-DICHLOROPROPANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| DIBROMOCHLOROMETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,2-DIBROMOETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1-CHLOROHEXANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB19 (14)
**Legal Location:**
**Collection Date:** 3/15/2016 13:30

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-19
**Matrix:** SOIL
**Percent Moisture:** 15.0

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **ETHYLBENZENE** | **9000** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| **M+P-XYLENE** | **29000** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| **O-XYLENE** | **390** | | **63** | **UG/KG** | 50 | 3/26/2016 17:24 |
| STYRENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| BROMOFORM | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **ISOPROPYLBENZENE** | **1300** | | **63** | **UG/KG** | 50 | 3/26/2016 17:24 |
| 1,2,3-TRICHLOROPROPANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| BROMOBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **N-PROPYLBENZENE** | **4200** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| 2-CHLOROTOLUENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **1,3,5-TRIMETHYLBENZENE** | **6900** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| 4-CHLOROTOLUENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| TERT-BUTYLBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **1,2,4-TRIMETHYLBENZENE** | **22000** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| **SEC-BUTYLBENZENE** | **1200** | | **63** | **UG/KG** | 50 | 3/26/2016 17:24 |
| 1,3-DICHLOROBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **P-ISOPROPYLTOLUENE** | **1100** | | **63** | **UG/KG** | 50 | 3/26/2016 17:24 |
| 1,4-DICHLOROBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **N-BUTYLBENZENE** | **4400** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| 1,2-DICHLOROBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 130 | UG/KG | 50 | 3/26/2016 17:24 |
| 1,2,4-TRICHLOROBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| HEXACHLOROBUTADIENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| **NAPHTHALENE** | **9500** | | **630** | **UG/KG** | 500 | 3/26/2016 17:46 |
| 1,2,3-TRICHLOROBENZENE | ND | | 63 | UG/KG | 50 | 3/26/2016 17:24 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *80-124* | *%REC* | 50 | 3/26/2016 17:24 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *80-124* | *%REC* | 500 | 3/26/2016 17:46 |
| *Surr: TOLUENE-D8* | *120* | * | *81-119* | *%REC* | 50 | 3/26/2016 17:24 |
| *Surr: TOLUENE-D8* | *101* | | *81-119* | *%REC* | 500 | 3/26/2016 17:46 |
| *Surr: 4-BROMOFLUOROBENZENE* | *97* | | *78-129* | *%REC* | 500 | 3/26/2016 17:46 |
| *Surr: 4-BROMOFLUOROBENZENE* | *106* | | *78-129* | *%REC* | 50 | 3/26/2016 17:24 |
| **GASOLINE RANGE ORGANICS** | **810000** | | **63000** | **UG/KG** | 500 | 3/26/2016 17:46 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB20 (9)
**Legal Location:**
**Collection Date:** 3/15/2016 14:25

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-20
**Matrix:** SOIL
**Percent Moisture:** 17.4

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/21/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **2.2** | J | **6** | **MG/KG** | 1 | 3/22/2016 02:02 |
| **MOTOR OIL RANGE ORGANICS** | **5** | J | **6** | **MG/KG** | 1 | 3/22/2016 02:02 |
| *Surr: O-TERPHENYL* | *82* | | *49-114* | *%REC* | 1 | 3/22/2016 02:02 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/26/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| CHLOROMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| VINYL CHLORIDE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| BROMOMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| CHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| TRICHLOROFLUOROMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1-DICHLOROETHENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| ACETONE | ND | | 660 | UG/KG | 50 | 3/26/2016 15:57 |
| **IODOMETHANE** | **84** | | **66** | **UG/KG** | 50 | 3/26/2016 15:57 |
| CARBON DISULFIDE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| METHYLENE CHLORIDE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| TRANS-1,2-DICHLOROETHENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| METHYL TERTIARY BUTYL ETHER | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1-DICHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| VINYL ACETATE | ND | | 130 | UG/KG | 50 | 3/26/2016 15:57 |
| CIS-1,2-DICHLOROETHENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 2-BUTANONE | ND | | 660 | UG/KG | 50 | 3/26/2016 15:57 |
| BROMOCHLOROMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| CHLOROFORM | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1,1-TRICHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 2,2-DICHLOROPROPANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| CARBON TETRACHLORIDE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1-DICHLOROPROPENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2-DICHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| BENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| TRICHLOROETHENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2-DICHLOROPROPANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| DIBROMOMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| BROMODICHLOROMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| CIS-1,3-DICHLOROPROPENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 4-METHYL-2-PENTANONE | ND | | 660 | UG/KG | 50 | 3/26/2016 15:57 |
| TOLUENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1,2-TRICHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 2-HEXANONE | ND | | 660 | UG/KG | 50 | 3/26/2016 15:57 |
| TETRACHLOROETHENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,3-DICHLOROPROPANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| DIBROMOCHLOROMETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2-DIBROMOETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1-CHLOROHEXANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** SB20 (9)
**Legal Location:**
**Collection Date:** 3/15/2016 14:25

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-20
**Matrix:** SOIL
**Percent Moisture:** 17.4

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| ETHYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| M+P-XYLENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| O-XYLENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| STYRENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| BROMOFORM | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| ISOPROPYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2,3-TRICHLOROPROPANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| BROMOBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| N-PROPYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 2-CHLOROTOLUENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 4-CHLOROTOLUENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| TERT-BUTYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| SEC-BUTYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,3-DICHLOROBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| P-ISOPROPYLTOLUENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,4-DICHLOROBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| N-BUTYLBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2-DICHLOROBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 130 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2,4-TRICHLOROBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| HEXACHLOROBUTADIENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| NAPHTHALENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| 1,2,3-TRICHLOROBENZENE | ND | | 66 | UG/KG | 50 | 3/26/2016 15:57 |
| *Surr: DIBROMOFLUOROMETHANE* | *96* | | *80-124* | *%REC* | 50 | 3/26/2016 15:57 |
| *Surr: TOLUENE-D8* | *102* | | *81-119* | *%REC* | 50 | 3/26/2016 15:57 |
| *Surr: 4-BROMOFLUOROBENZENE* | *97* | | *78-129* | *%REC* | 50 | 3/26/2016 15:57 |
| GASOLINE RANGE ORGANICS | ND | | 6600 | UG/KG | 50 | 3/26/2016 15:57 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** Trip Blank
**Legal Location:**
**Collection Date:** 3/15/2016

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-21
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | | **SW8260_25** | | Prep Date: **3/20/2016** | | PrepBy: **SDW** |
| DICHLORODIFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| VINYL CHLORIDE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| BROMOMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| TRICHLOROFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| ACETONE | ND | | 10 | UG/L | 1 | 3/20/2016 18:05 |
| IODOMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CARBON DISULFIDE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| METHYLENE CHLORIDE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| TRANS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| METHYL TERTIARY BUTYL ETHER | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| VINYL ACETATE | ND | | 2 | UG/L | 1 | 3/20/2016 18:05 |
| CIS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 2-BUTANONE | ND | | 10 | UG/L | 1 | 3/20/2016 18:05 |
| BROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CHLOROFORM | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1,1-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 2,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CARBON TETRACHLORIDE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| BENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| TRICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| DIBROMOMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| BROMODICHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CIS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 4-METHYL-2-PENTANONE | ND | | 10 | UG/L | 1 | 3/20/2016 18:05 |
| TOLUENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1,2-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 2-HEXANONE | ND | | 10 | UG/L | 1 | 3/20/2016 18:05 |
| TETRACHLOROETHENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,3-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| DIBROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2-DIBROMOETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1-CHLOROHEXANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| CHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| ETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| M+P-XYLENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| O-XYLENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |

**Client:** Braun Intertec
**Project:** B1601155 Hwy 1804 Additional
**Sample ID:** Trip Blank
**Legal Location:**
**Collection Date:** 3/15/2016

**Date:** *11-Apr-16*
**Work Order:** 1603307
**Lab ID:** 1603307-21
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| STYRENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| BROMOFORM | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| ISOPROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2,3-TRICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| BROMOBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| N-PROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 2-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 4-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| TERT-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| SEC-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,3-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| P-ISOPROPYLTOLUENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,4-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| N-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 2 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2,4-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| HEXACHLOROBUTADIENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| NAPHTHALENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| 1,2,3-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/20/2016 18:05 |
| *Surr: DIBROMOFLUOROMETHANE* | *101* | | *84-118* | *%REC* | 1 | 3/20/2016 18:05 |
| *Surr: TOLUENE-D8* | *101* | | *85-115* | *%REC* | 1 | 3/20/2016 18:05 |
| *Surr: 4-BROMOFLUOROBENZENE* | *102* | | *85-115* | *%REC* | 1 | 3/20/2016 18:05 |
| GASOLINE RANGE ORGANICS | ND | | 100 | UG/L | 1 | 3/20/2016 18:05 |

| | | | |
|---|---|---|---|
| **Client:** | Braun Intertec | **Date:** | *11-Apr-16* |
| **Project:** | B1601155 Hwy 1804 Additional | **Work Order:** | 1603307 |
| **Sample ID:** | Trip Blank | **Lab ID:** | 1603307-21 |
| **Legal Location:** | | **Matrix:** | WATER |
| **Collection Date:** | 3/15/2016 | **Percent Moisture:** | |

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|

## Explanation of Qualifiers

**Radiochemistry:**

U or ND - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit
M - Requested MDC not met.
LT - Result is less than requested MDC but greater than achieved MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits
NC - Not Calculated for duplicate results less than 5 times MDC
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

**Inorganics:**

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
U or ND - Indicates that the compound was analyzed for but not detected.
E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
M - Duplicate injection precision was not met.
N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
* - Duplicate analysis (relative percent difference) not within control limits.
S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

**Organics:**

U or ND - Indicates that the compound was analyzed for but not detected.
B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
E - Analyte concentration exceeds the upper level of the calibration range.
J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
A - A tentatively identified compound is a suspected aldol-condensation product.
X - The analyte was diluted below an accurate quantitation level.
* - The spike recovery is equal to or outside the control criteria used.
+ - The relative percent difference (RPD) equals or exceeds the control criteria.
G - A pattern resembling gasoline was detected in this sample.
D - A pattern resembling diesel was detected in this sample.
M - A pattern resembling motor oil was detected in this sample.
C - A pattern resembling crude oil was detected in this sample.
4 - A pattern resembling JP-4 was detected in this sample.
5 - A pattern resembling JP-5 was detected in this sample.
H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

# QC BATCH REPORT

Batch ID: **EX160321-1-1** Instrument ID: **FUELS-1** Method: **SW8015M_MO**

**LCS** Sample ID: **EX160321-1** Units: **MG/KG** Analysis Date: **3/22/2016 02:33**

Client ID: Run ID: **HC160321-7A** Prep Date: **3/21/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | 125 | 5 | 125 | | 100 | 82-120 | | | | 20 | |
| Surr: O-TERPHENYL | 4.27 | | 6.25 | | 68 | 49-114 | | | | | |

**LCSD** Sample ID: **EX160321-1** Units: **MG/KG** Analysis Date: **3/22/2016 03:04**

Client ID: Run ID: **HC160321-7A** Prep Date: **3/21/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | 130 | 5 | 125 | | 104 | 82-120 | | 125 | 4 | 20 | |
| Surr: O-TERPHENYL | 4.39 | | 6.25 | | 70 | 49-114 | | | 3 | | |

**MB** Sample ID: **EX160321-1** Units: **MG/KG** Analysis Date: **3/21/2016 13:10**

Client ID: Run ID: **HC160321-7A** Prep Date: **3/21/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | ND | 5 | | | | | | | | | |
| MOTOR OIL RANGE ORGANICS | ND | 5 | | | | | | | | | |
| Surr: O-TERPHENYL | 4.42 | | 6.25 | | 71 | 49-114 | | | | | |

**The following samples were analyzed in this batch:**

| | | |
|---|---|---|
| 1603307-1 | 1603307-2 | 1603307-3 |
| 1603307-4 | 1603307-5 | 1603307-6 |
| 1603307-7 | 1603307-10 | 1603307-11 |
| 1603307-12 | 1603307-13 | 1603307-14 |
| 1603307-15 | 1603307-17 | 1603307-18 |
| 1603307-19 | 1603307-20 | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-3** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/20/2016 15:57**

Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 10.7 | 1 | 10 | | 107 | 63-125 | | | | 20 | |
| CHLOROMETHANE | 10.5 | 1 | 10 | | 105 | 73-122 | | | | 20 | |
| VINYL CHLORIDE | 10.9 | 1 | 10 | | 109 | 72-123 | | | | 20 | |
| BROMOMETHANE | 10.7 | 1 | 10 | | 107 | 68-123 | | | | 20 | |
| CHLOROETHANE | 11.4 | 1 | 10 | | 114 | 74-124 | | | | 20 | |
| TRICHLOROFLUOROMETHANE | 11.2 | 1 | 10 | | 112 | 74-124 | | | | 20 | |
| 1,1-DICHLOROETHENE | 11.1 | 1 | 10 | | 111 | 77-119 | | | | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 11.2 | 1 | 10 | | 112 | 79-122 | | | | 20 | |
| ACETONE | 44.9 | 10 | 40 | | 112 | 62-142 | | | | 30 | |
| IODOMETHANE | 11.5 | 1 | 10 | | 115 | 72-126 | | | | 20 | |
| CARBON DISULFIDE | 11.3 | 1 | 10 | | 113 | 76-121 | | | | 20 | |
| METHYLENE CHLORIDE | 12.3 | 1 | 10 | | 123 | 71-130 | | | | 20 | |
| TRANS-1,2-DICHLOROETHENE | 11.3 | 1 | 10 | | 113 | 82-117 | | | | 20 | |
| METHYL TERTIARY BUTYL ETHER | 21.8 | 1 | 20 | | 109 | 77-119 | | | | 20 | |
| 1,1-DICHLOROETHANE | 11.1 | 1 | 10 | | 111 | 83-119 | | | | 20 | |
| VINYL ACETATE | 12.2 | 2 | 10 | | 122 | 76-121 | | | | 20 | * |
| CIS-1,2-DICHLOROETHENE | 11.1 | 1 | 10 | | 111 | 83-117 | | | | 20 | |
| 2-BUTANONE | 44.3 | 10 | 40 | | 111 | 70-135 | | | | 30 | |
| BROMOCHLOROMETHANE | 11.8 | 1 | 10 | | 118 | 84-129 | | | | 20 | |
| CHLOROFORM | 11.4 | 1 | 10 | | 114 | 82-119 | | | | 20 | |
| 1,1,1-TRICHLOROETHANE | 11 | 1 | 10 | | 110 | 80-120 | | | | 20 | |
| 2,2-DICHLOROPROPANE | 11.8 | 1 | 10 | | 118 | 82-140 | | | | 20 | |
| CARBON TETRACHLORIDE | 11.3 | 1 | 10 | | 113 | 77-122 | | | | 20 | |
| 1,1-DICHLOROPROPENE | 11.2 | 1 | 10 | | 112 | 84-118 | | | | 20 | |
| 1,2-DICHLOROETHANE | 11.3 | 1 | 10 | | 113 | 74-128 | | | | 20 | |
| BENZENE | 11 | 1 | 10 | | 110 | 83-117 | | | | 20 | |
| TRICHLOROETHENE | 11.4 | 1 | 10 | | 114 | 83-117 | | | | 20 | |
| 1,2-DICHLOROPROPANE | 11.2 | 1 | 10 | | 112 | 84-120 | | | | 20 | |
| DIBROMOMETHANE | 11.9 | 1 | 10 | | 119 | 79-122 | | | | 20 | |
| BROMODICHLOROMETHANE | 11.6 | 1 | 10 | | 116 | 76-122 | | | | 20 | |
| CIS-1,3-DICHLOROPROPENE | 11.7 | 1 | 10 | | 117 | 87-126 | | | | 20 | |
| 4-METHYL-2-PENTANONE | 46.3 | 10 | 40 | | 116 | 73-125 | | | | 30 | |
| TOLUENE | 11 | 1 | 10 | | 110 | 82-113 | | | | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 11.8 | 1 | 10 | | 118 | 81-114 | | | | 20 | * |
| 1,1,2-TRICHLOROETHANE | 11.7 | 1 | 10 | | 117 | 78-116 | | | | 20 | * |
| 2-HEXANONE | 47 | 10 | 40 | | 117 | 71-124 | | | | 30 | |
| TETRACHLOROETHENE | 11.5 | 1 | 10 | | 115 | 84-117 | | | | 20 | |
| 1,3-DICHLOROPROPANE | 11.4 | 1 | 10 | | 114 | 80-115 | | | | 20 | |
| DIBROMOCHLOROMETHANE | 12.2 | 1 | 10 | | 122 | 82-118 | | | | 20 | * |
| 1,2-DIBROMOETHANE | 11.8 | 1 | 10 | | 118 | 79-114 | | | | 20 | * |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-3** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/20/2016 15:57**

Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 10.9 | 1 | 10 | | 109 | 80-117 | | | | 20 | |
| CHLOROBENZENE | 11.5 | 1 | 10 | | 115 | 81-113 | | | | 20 | * |
| 1,1,1,2-TETRACHLOROETHANE | 11.7 | 1 | 10 | | 117 | 78-113 | | | | 20 | * |
| ETHYLBENZENE | 11 | 1 | 10 | | 110 | 81-113 | | | | 20 | |
| M+P-XYLENE | 21.8 | 1 | 20 | | 109 | 82-115 | | | | 20 | |
| O-XYLENE | 11.1 | 1 | 10 | | 111 | 81-115 | | | | 20 | |
| STYRENE | 11.5 | 1 | 10 | | 115 | 78-118 | | | | 20 | |
| BROMOFORM | 8.82 | 1 | 10 | | 88 | 70-120 | | | | 20 | |
| ISOPROPYLBENZENE | 11.3 | 1 | 10 | | 113 | 80-113 | | | | 20 | |
| 1,2,3-TRICHLOROPROPANE | 11.7 | 1 | 10 | | 117 | 78-117 | | | | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 11.8 | 1 | 10 | | 118 | 75-121 | | | | 20 | |
| BROMOBENZENE | 11.6 | 1 | 10 | | 116 | 81-114 | | | | 20 | * |
| N-PROPYLBENZENE | 11.7 | 1 | 10 | | 117 | 79-116 | | | | 20 | * |
| 2-CHLOROTOLUENE | 12 | 1 | 10 | | 120 | 79-116 | | | | 20 | * |
| 1,3,5-TRIMETHYLBENZENE | 11.5 | 1 | 10 | | 115 | 78-116 | | | | 20 | |
| 4-CHLOROTOLUENE | 12 | 1 | 10 | | 120 | 78-115 | | | | 20 | * |
| TERT-BUTYLBENZENE | 11.9 | 1 | 10 | | 119 | 76-120 | | | | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 11.4 | 1 | 10 | | 114 | 80-117 | | | | 20 | |
| SEC-BUTYLBENZENE | 12 | 1 | 10 | | 120 | 78-115 | | | | 20 | * |
| 1,3-DICHLOROBENZENE | 11.9 | 1 | 10 | | 119 | 79-115 | | | | 20 | * |
| P-ISOPROPYLTOLUENE | 11.8 | 1 | 10 | | 118 | 77-116 | | | | 20 | * |
| 1,4-DICHLOROBENZENE | 11.7 | 1 | 10 | | 117 | 82-114 | | | | 20 | * |
| N-BUTYLBENZENE | 12.2 | 1 | 10 | | 122 | 79-117 | | | | 20 | * |
| 1,2-DICHLOROBENZENE | 11.8 | 1 | 10 | | 118 | 82-114 | | | | 20 | * |
| 1,2-DIBROMO-3-CHLOROPROPANE | 9.15 | 2 | 10 | | 92 | 73-125 | | | | 20 | |
| 1,2,4-TRICHLOROBENZENE | 9.73 | 1 | 10 | | 97 | 75-120 | | | | 20 | |
| HEXACHLOROBUTADIENE | 13.1 | 1 | 10 | | 131 | 71-124 | | | | 20 | * |
| NAPHTHALENE | 9.28 | 1 | 10 | | 93 | 71-131 | | | | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.84 | 1 | 10 | | 98 | 70-131 | | | | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 25.6 | | 25 | | 102 | 84-118 | | | | | |
| Surr: TOLUENE-D8 | 25.1 | | 25 | | 100 | 85-115 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 25.4 | | 25 | | 102 | 85-115 | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-3** Instrument ID: **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/21/2016 00:29**

Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 11 | 1 | 10 | | 110 | 63-125 | | 10.7 | 3 | 20 | |
| CHLOROMETHANE | 10.4 | 1 | 10 | | 104 | 73-122 | | 10.5 | 1 | 20 | |
| VINYL CHLORIDE | 10.8 | 1 | 10 | | 108 | 72-123 | | 10.9 | 1 | 20 | |
| BROMOMETHANE | 11 | 1 | 10 | | 110 | 68-123 | | 10.7 | 3 | 20 | |
| CHLOROETHANE | 11.5 | 1 | 10 | | 115 | 74-124 | | 11.4 | 1 | 20 | |
| TRICHLOROFLUOROMETHANE | 10.6 | 1 | 10 | | 106 | 74-124 | | 11.2 | 5 | 20 | |
| 1,1-DICHLOROETHENE | 10.6 | 1 | 10 | | 106 | 77-119 | | 11.1 | 4 | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 10.8 | 1 | 10 | | 108 | 79-122 | | 11.2 | 4 | 20 | |
| ACETONE | 43.4 | 10 | 40 | | 109 | 62-142 | | 44.9 | 3 | 30 | |
| IODOMETHANE | 10.1 | 1 | 10 | | 101 | 72-126 | | 11.5 | 13 | 20 | |
| CARBON DISULFIDE | 10.8 | 1 | 10 | | 108 | 76-121 | | 11.3 | 4 | 20 | |
| METHYLENE CHLORIDE | 11.7 | 1 | 10 | | 117 | 71-130 | | 12.3 | 5 | 20 | |
| TRANS-1,2-DICHLOROETHENE | 11.2 | 1 | 10 | | 112 | 82-117 | | 11.3 | 1 | 20 | |
| METHYL TERTIARY BUTYL ETHER | 22 | 1 | 20 | | 110 | 77-119 | | 21.8 | 1 | 20 | |
| 1,1-DICHLOROETHANE | 11.2 | 1 | 10 | | 112 | 83-119 | | 11.1 | 1 | 20 | |
| VINYL ACETATE | 11.6 | 2 | 10 | | 116 | 76-121 | | 12.2 | 4 | 20 | |
| CIS-1,2-DICHLOROETHENE | 11.2 | 1 | 10 | | 112 | 83-117 | | 11.1 | 2 | 20 | |
| 2-BUTANONE | 42.5 | 10 | 40 | | 106 | 70-135 | | 44.3 | 4 | 30 | |
| BROMOCHLOROMETHANE | 11.6 | 1 | 10 | | 116 | 84-129 | | 11.8 | 2 | 20 | |
| CHLOROFORM | 11.6 | 1 | 10 | | 116 | 82-119 | | 11.4 | 2 | 20 | |
| 1,1,1-TRICHLOROETHANE | 11 | 1 | 10 | | 110 | 80-120 | | 11 | 0 | 20 | |
| 2,2-DICHLOROPROPANE | 9.13 | 1 | 10 | | 91 | 82-140 | | 11.8 | 26 | 20 | + |
| CARBON TETRACHLORIDE | 11.1 | 1 | 10 | | 111 | 77-122 | | 11.3 | 2 | 20 | |
| 1,1-DICHLOROPROPENE | 11.1 | 1 | 10 | | 111 | 84-118 | | 11.2 | 1 | 20 | |
| 1,2-DICHLOROETHANE | 11.3 | 1 | 10 | | 113 | 74-128 | | 11.3 | 0 | 20 | |
| BENZENE | 11.2 | 1 | 10 | | 112 | 83-117 | | 11 | 2 | 20 | |
| TRICHLOROETHENE | 11.3 | 1 | 10 | | 113 | 83-117 | | 11.4 | 1 | 20 | |
| 1,2-DICHLOROPROPANE | 11.4 | 1 | 10 | | 114 | 84-120 | | 11.2 | 1 | 20 | |
| DIBROMOMETHANE | 12.1 | 1 | 10 | | 121 | 79-122 | | 11.9 | 2 | 20 | |
| BROMODICHLOROMETHANE | 12 | 1 | 10 | | 120 | 76-122 | | 11.6 | 4 | 20 | |
| CIS-1,3-DICHLOROPROPENE | 11.5 | 1 | 10 | | 115 | 87-126 | | 11.7 | 2 | 20 | |
| 4-METHYL-2-PENTANONE | 45.5 | 10 | 40 | | 114 | 73-125 | | 46.3 | 2 | 30 | |
| TOLUENE | 11 | 1 | 10 | | 110 | 82-113 | | 11 | 0 | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 11.5 | 1 | 10 | | 115 | 81-114 | | 11.8 | 3 | 20 | * |
| 1,1,2-TRICHLOROETHANE | 11.9 | 1 | 10 | | 119 | 78-116 | | 11.7 | 1 | 20 | * |
| 2-HEXANONE | 45.8 | 10 | 40 | | 114 | 71-124 | | 47 | 3 | 30 | |
| TETRACHLOROETHENE | 11.3 | 1 | 10 | | 113 | 84-117 | | 11.5 | 1 | 20 | |
| 1,3-DICHLOROPROPANE | 11.6 | 1 | 10 | | 116 | 80-115 | | 11.4 | 1 | 20 | * |
| DIBROMOCHLOROMETHANE | 11.9 | 1 | 10 | | 119 | 82-118 | | 12.2 | 3 | 20 | * |
| 1,2-DIBROMOETHANE | 11.8 | 1 | 10 | | 118 | 79-114 | | 11.8 | 0 | 20 | * |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-3** Instrument ID: **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/21/2016 00:29**

Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 10.8 | 1 | 10 | | 108 | 80-117 | | 10.9 | 0 | 20 | |
| CHLOROBENZENE | 11.6 | 1 | 10 | | 116 | 81-113 | | 11.5 | 1 | 20 | * |
| 1,1,1,2-TETRACHLOROETHANE | 12 | 1 | 10 | | 120 | 78-113 | | 11.7 | 2 | 20 | * |
| ETHYLBENZENE | 11.4 | 1 | 10 | | 114 | 81-113 | | 11 | 3 | 20 | * |
| M+P-XYLENE | 22.3 | 1 | 20 | | 111 | 82-115 | | 21.8 | 2 | 20 | |
| O-XYLENE | 11.3 | 1 | 10 | | 113 | 81-115 | | 11.1 | 2 | 20 | |
| STYRENE | 11.9 | 1 | 10 | | 119 | 78-118 | | 11.5 | 3 | 20 | * |
| BROMOFORM | 8.55 | 1 | 10 | | 86 | 70-120 | | 8.82 | 3 | 20 | |
| ISOPROPYLBENZENE | 11.5 | 1 | 10 | | 115 | 80-113 | | 11.3 | 2 | 20 | * |
| 1,2,3-TRICHLOROPROPANE | 11.1 | 1 | 10 | | 111 | 78-117 | | 11.7 | 6 | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 11.6 | 1 | 10 | | 116 | 75-121 | | 11.8 | 2 | 20 | |
| BROMOBENZENE | 11.6 | 1 | 10 | | 116 | 81-114 | | 11.6 | 0 | 20 | * |
| N-PROPYLBENZENE | 11.3 | 1 | 10 | | 113 | 79-116 | | 11.7 | 3 | 20 | |
| 2-CHLOROTOLUENE | 11.6 | 1 | 10 | | 116 | 79-116 | | 12 | 4 | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 11.4 | 1 | 10 | | 114 | 78-116 | | 11.5 | 1 | 20 | |
| 4-CHLOROTOLUENE | 11.7 | 1 | 10 | | 117 | 78-115 | | 12 | 2 | 20 | * |
| TERT-BUTYLBENZENE | 11.5 | 1 | 10 | | 115 | 76-120 | | 11.9 | 3 | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 11.6 | 1 | 10 | | 116 | 80-117 | | 11.4 | 2 | 20 | |
| SEC-BUTYLBENZENE | 11.2 | 1 | 10 | | 112 | 78-115 | | 12 | 7 | 20 | |
| 1,3-DICHLOROBENZENE | 11.6 | 1 | 10 | | 116 | 79-115 | | 11.9 | 2 | 20 | * |
| P-ISOPROPYLTOLUENE | 11.3 | 1 | 10 | | 113 | 77-116 | | 11.8 | 5 | 20 | |
| 1,4-DICHLOROBENZENE | 11.3 | 1 | 10 | | 113 | 82-114 | | 11.7 | 3 | 20 | |
| N-BUTYLBENZENE | 11.4 | 1 | 10 | | 114 | 79-117 | | 12.2 | 7 | 20 | |
| 1,2-DICHLOROBENZENE | 11.8 | 1 | 10 | | 118 | 82-114 | | 11.8 | 0 | 20 | * |
| 1,2-DIBROMO-3-CHLOROPROPANE | 9.48 | 2 | 10 | | 95 | 73-125 | | 9.15 | 4 | 20 | |
| 1,2,4-TRICHLOROBENZENE | 8.7 | 1 | 10 | | 87 | 75-120 | | 9.73 | 11 | 20 | |
| HEXACHLOROBUTADIENE | 10.9 | 1 | 10 | | 109 | 71-124 | | 13.1 | 18 | 20 | |
| NAPHTHALENE | 9.37 | 1 | 10 | | 94 | 71-131 | | 9.28 | 1 | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.09 | 1 | 10 | | 91 | 70-131 | | 9.84 | 8 | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 24.7 | | 25 | | 99 | 84-118 | | | 3 | | |
| Surr: TOLUENE-D8 | 24.4 | | 25 | | 98 | 85-115 | | | 3 | | |
| Surr: 4-BROMOFLUOROBENZENE | 24.4 | | 25 | | 97 | 85-115 | | | 4 | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-3** Instrument ID: **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/20/2016 16:40**

Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | ND | 1 | | | | | | | | | |
| CHLOROMETHANE | ND | 1 | | | | | | | | | |
| VINYL CHLORIDE | ND | 1 | | | | | | | | | |
| BROMOMETHANE | ND | 1 | | | | | | | | | |
| CHLOROETHANE | ND | 1 | | | | | | | | | |
| TRICHLOROFLUOROMETHANE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | 1 | | | | | | | | | |
| ACETONE | ND | 10 | | | | | | | | | |
| IODOMETHANE | ND | 1 | | | | | | | | | |
| CARBON DISULFIDE | ND | 1 | | | | | | | | | |
| METHYLENE CHLORIDE | ND | 1 | | | | | | | | | |
| TRANS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| METHYL TERTIARY BUTYL ETHER | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| VINYL ACETATE | ND | 2 | | | | | | | | | |
| CIS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 2-BUTANONE | ND | 10 | | | | | | | | | |
| BROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |
| CHLOROFORM | ND | 1 | | | | | | | | | |
| 1,1,1-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| CARBON TETRACHLORIDE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| BENZENE | ND | 1 | | | | | | | | | |
| TRICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOMETHANE | ND | 1 | | | | | | | | | |
| BROMODICHLOROMETHANE | ND | 1 | | | | | | | | | |
| CIS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 4-METHYL-2-PENTANONE | ND | 10 | | | | | | | | | |
| TOLUENE | ND | 1 | | | | | | | | | |
| TRANS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2-HEXANONE | ND | 10 | | | | | | | | | |
| TETRACHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |
| 1,2-DIBROMOETHANE | ND | 1 | | | | | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-3** Instrument ID: **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/20/2016 16:40**

Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | ND | 1 | | | | | | | | | |
| CHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| ETHYLBENZENE | ND | 1 | | | | | | | | | |
| M+P-XYLENE | ND | 1 | | | | | | | | | |
| O-XYLENE | ND | 1 | | | | | | | | | |
| STYRENE | ND | 1 | | | | | | | | | |
| BROMOFORM | ND | 1 | | | | | | | | | |
| ISOPROPYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROPROPANE | ND | 1 | | | | | | | | | |
| 1,1,2,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| BROMOBENZENE | ND | 1 | | | | | | | | | |
| N-PROPYLBENZENE | ND | 1 | | | | | | | | | |
| 2-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| 1,3,5-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| 4-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| TERT-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| SEC-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| P-ISOPROPYLTOLUENE | ND | 1 | | | | | | | | | |
| 1,4-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| N-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | 2 | | | | | | | | | |
| 1,2,4-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| HEXACHLOROBUTADIENE | ND | 1 | | | | | | | | | |
| NAPHTHALENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| Surr: DIBROMOFLUOROMETHANE | 25 | | 25 | | 100 | 84-118 | | | | | |
| Surr: TOLUENE-D8 | 25.2 | | 25 | | 101 | 85-115 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 26.1 | | 25 | | 104 | 85-115 | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160320-3-4** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160320-6** Units: **UG/L** Analysis Date: **3/20/2016 13:39**
Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 1140 | 100 | 1000 | | 114 | 80-120 | | | | 20 | |

**LCSD** Sample ID: **VL160320-6** Units: **UG/L** Analysis Date: **3/20/2016 14:01**
Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 1190 | 100 | 1000 | | 119 | 80-120 | | 1140 | 4 | 20 | |

**MB** Sample ID: **VL160320-3** Units: **UG/L** Analysis Date: **3/20/2016 16:40**
Client ID: Run ID: **VL160320-3A** Prep Date: **3/20/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | ND | 100 | | | | | | | | | |

**The following samples were analyzed in this batch:**

| | | |
|---|---|---|
| 1603307-1 | 1603307-2 | 1603307-3 |
| 1603307-4 | 1603307-5 | 1603307-21 |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160325-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160325-3** Units: **UG/KG** Analysis Date: **3/26/2016 01:23**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 9.1 | 1 | 10 | | 91 | 38-131 | | | | 20 | |
| CHLOROMETHANE | 8.95 | 1 | 10 | | 89 | 62-141 | | | | 20 | |
| VINYL CHLORIDE | 9.82 | 1 | 10 | | 98 | 77-124 | | | | 20 | |
| BROMOMETHANE | 9.89 | 1 | 10 | | 99 | 76-133 | | | | 20 | |
| CHLOROETHANE | 11.3 | 1 | 10 | | 113 | 81-130 | | | | 20 | |
| TRICHLOROFLUOROMETHANE | 9.73 | 1 | 10 | | 97 | 84-146 | | | | 20 | |
| 1,1-DICHLOROETHENE | 8.54 | 1 | 10 | | 85 | 75-126 | | | | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 8.52 | 1 | 10 | | 85 | 71-144 | | | | 20 | |
| ACETONE | 31.8 | 10 | 40 | | 80 | 50-150 | | | | 30 | |
| IODOMETHANE | 7.78 | 1 | 10 | | 78 | 76-116 | | | | 20 | |
| CARBON DISULFIDE | 8.34 | 1 | 10 | | 83 | 68-129 | | | | 20 | |
| METHYLENE CHLORIDE | 8.01 | 1 | 10 | | 80 | 22-146 | | | | 20 | |
| TRANS-1,2-DICHLOROETHENE | 8.76 | 1 | 10 | | 88 | 76-135 | | | | 20 | |
| METHYL TERTIARY BUTYL ETHER | 17.7 | 1 | 20 | | 88 | 75-125 | | | | 20 | |
| 1,1-DICHLOROETHANE | 8.74 | 1 | 10 | | 87 | 77-131 | | | | 20 | |
| VINYL ACETATE | 8.26 | 2 | 10 | | 83 | 56-151 | | | | 20 | |
| CIS-1,2-DICHLOROETHENE | 8.96 | 1 | 10 | | 90 | 81-121 | | | | 20 | |
| 2-BUTANONE | 31.5 | 10 | 40 | | 79 | 50-150 | | | | 30 | |
| BROMOCHLOROMETHANE | 9.05 | 1 | 10 | | 90 | 85-126 | | | | 20 | |
| CHLOROFORM | 8.91 | 1 | 10 | | 89 | 84-125 | | | | 20 | |
| 1,1,1-TRICHLOROETHANE | 8.93 | 1 | 10 | | 89 | 82-129 | | | | 20 | |
| 2,2-DICHLOROPROPANE | 8.27 | 1 | 10 | | 83 | 79-130 | | | | 20 | |
| CARBON TETRACHLORIDE | 9.01 | 1 | 10 | | 90 | 83-135 | | | | 20 | |
| 1,1-DICHLOROPROPENE | 8.89 | 1 | 10 | | 89 | 85-127 | | | | 20 | |
| 1,2-DICHLOROETHANE | 8.7 | 1 | 10 | | 87 | 84-126 | | | | 20 | |
| BENZENE | 8.85 | 1 | 10 | | 89 | 82-122 | | | | 20 | |
| TRICHLOROETHENE | 9.03 | 1 | 10 | | 90 | 82-121 | | | | 20 | |
| 1,2-DICHLOROPROPANE | 9.1 | 1 | 10 | | 91 | 81-121 | | | | 20 | |
| DIBROMOMETHANE | 8.99 | 1 | 10 | | 90 | 81-125 | | | | 20 | |
| BROMODICHLOROMETHANE | 9.06 | 1 | 10 | | 91 | 82-120 | | | | 20 | |
| CIS-1,3-DICHLOROPROPENE | 9.11 | 1 | 10 | | 91 | 79-120 | | | | 20 | |
| 4-METHYL-2-PENTANONE | 35.4 | 10 | 40 | | 89 | 50-150 | | | | 30 | |
| TOLUENE | 8.66 | 1 | 10 | | 87 | 83-121 | | | | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 8.83 | 1 | 10 | | 88 | 78-113 | | | | 20 | |
| 1,1,2-TRICHLOROETHANE | 9.25 | 1 | 10 | | 93 | 82-122 | | | | 20 | |
| 2-HEXANONE | 36.6 | 10 | 40 | | 91 | 50-150 | | | | 30 | |
| TETRACHLOROETHENE | 9.32 | 1 | 10 | | 93 | 79-136 | | | | 20 | |
| 1,3-DICHLOROPROPANE | 9.16 | 1 | 10 | | 92 | 80-126 | | | | 20 | |
| DIBROMOCHLOROMETHANE | 9.74 | 1 | 10 | | 97 | 80-123 | | | | 20 | |
| 1,2-DIBROMOETHANE | 9.41 | 1 | 10 | | 94 | 85-124 | | | | 20 | |

# QC BATCH REPORT

Batch ID: **VL160325-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160325-3** Units: **UG/KG** Analysis Date: **3/26/2016 01:23**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 9.27 | 1 | 10 | | 93 | 77-135 | | | | 20 | |
| CHLOROBENZENE | 9.48 | 1 | 10 | | 95 | 82-121 | | | | 20 | |
| 1,1,1,2-TETRACHLOROETHANE | 9.46 | 1 | 10 | | 95 | 85-128 | | | | 20 | |
| ETHYLBENZENE | 9.39 | 1 | 10 | | 94 | 83-126 | | | | 20 | |
| M+P-XYLENE | 18 | 1 | 20 | | 90 | 82-129 | | | | 20 | |
| O-XYLENE | 9.4 | 1 | 10 | | 94 | 87-132 | | | | 20 | |
| STYRENE | 9.77 | 1 | 10 | | 98 | 82-123 | | | | 20 | |
| BROMOFORM | 9.4 | 1 | 10 | | 94 | 79-118 | | | | 20 | |
| ISOPROPYLBENZENE | 9.67 | 1 | 10 | | 97 | 75-132 | | | | 20 | |
| 1,2,3-TRICHLOROPROPANE | 9.72 | 1 | 10 | | 97 | 77-128 | | | | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 9.43 | 1 | 10 | | 94 | 74-130 | | | | 20 | |
| BROMOBENZENE | 9.37 | 1 | 10 | | 94 | 78-124 | | | | 20 | |
| N-PROPYLBENZENE | 9.37 | 1 | 10 | | 94 | 75-134 | | | | 20 | |
| 2-CHLOROTOLUENE | 9.41 | 1 | 10 | | 94 | 77-128 | | | | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 9.46 | 1 | 10 | | 95 | 77-131 | | | | 20 | |
| 4-CHLOROTOLUENE | 9.46 | 1 | 10 | | 95 | 79-128 | | | | 20 | |
| TERT-BUTYLBENZENE | 9.53 | 1 | 10 | | 95 | 76-134 | | | | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 9.23 | 1 | 10 | | 92 | 80-138 | | | | 20 | |
| SEC-BUTYLBENZENE | 9.64 | 1 | 10 | | 96 | 73-135 | | | | 20 | |
| 1,3-DICHLOROBENZENE | 9.45 | 1 | 10 | | 94 | 79-126 | | | | 20 | |
| P-ISOPROPYLTOLUENE | 9.72 | 1 | 10 | | 97 | 72-132 | | | | 20 | |
| 1,4-DICHLOROBENZENE | 9.66 | 1 | 10 | | 97 | 81-125 | | | | 20 | |
| N-BUTYLBENZENE | 9.89 | 1 | 10 | | 99 | 77-141 | | | | 20 | |
| 1,2-DICHLOROBENZENE | 9.66 | 1 | 10 | | 97 | 82-128 | | | | 20 | |
| 1,2-DIBROMO-3-CHLOROPROPANE | 9.62 | 2 | 10 | | 96 | 64-134 | | | | 20 | |
| 1,2,4-TRICHLOROBENZENE | 8.96 | 1 | 10 | | 90 | 80-128 | | | | 20 | |
| HEXACHLOROBUTADIENE | 10.9 | 1 | 10 | | 109 | 70-136 | | | | 20 | |
| NAPHTHALENE | 8.67 | 1 | 10 | | 87 | 78-125 | | | | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.53 | 1 | 10 | | 95 | 79-131 | | | | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 25.1 | | 25 | | 101 | 80-124 | | | | | |
| Surr: TOLUENE-D8 | 25.2 | | 25 | | 101 | 81-119 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 24.7 | | 25 | | 99 | 78-129 | | | | | |

**LCS** Sample ID: **VL160325-6** Units: **UG/KG** Analysis Date: **3/25/2016 20:04**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 903 | 100 | 1000 | | 90 | 80-120 | | | | 20 | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160325-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160325-3** Units: **UG/KG** Analysis Date: **3/26/2016 01:44**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 8.87 | 1 | 10 | | 89 | 38-131 | | 9.1 | 3 | 20 | |
| CHLOROMETHANE | 9.03 | 1 | 10 | | 90 | 62-141 | | 8.95 | 1 | 20 | |
| VINYL CHLORIDE | 9.38 | 1 | 10 | | 94 | 77-124 | | 9.82 | 5 | 20 | |
| BROMOMETHANE | 9.11 | 1 | 10 | | 91 | 76-133 | | 9.89 | 8 | 20 | |
| CHLOROETHANE | 9.14 | 1 | 10 | | 91 | 81-130 | | 11.3 | 21 | 20 | + |
| TRICHLOROFLUOROMETHANE | 9.53 | 1 | 10 | | 95 | 84-146 | | 9.73 | 2 | 20 | |
| 1,1-DICHLOROETHENE | 8.29 | 1 | 10 | | 83 | 75-126 | | 8.54 | 3 | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 8.25 | 1 | 10 | | 82 | 71-144 | | 8.52 | 3 | 20 | |
| ACETONE | 33.6 | 10 | 40 | | 84 | 50-150 | | 31.8 | 5 | 30 | |
| IODOMETHANE | 7.87 | 1 | 10 | | 79 | 76-116 | | 7.78 | 1 | 20 | |
| CARBON DISULFIDE | 8.22 | 1 | 10 | | 82 | 68-129 | | 8.34 | 2 | 20 | |
| METHYLENE CHLORIDE | 7.88 | 1 | 10 | | 79 | 22-146 | | 8.01 | 2 | 20 | |
| TRANS-1,2-DICHLOROETHENE | 8.67 | 1 | 10 | | 87 | 76-135 | | 8.76 | 1 | 20 | |
| METHYL TERTIARY BUTYL ETHER | 17.8 | 1 | 20 | | 89 | 75-125 | | 17.7 | 1 | 20 | |
| 1,1-DICHLOROETHANE | 8.64 | 1 | 10 | | 86 | 77-131 | | 8.74 | 1 | 20 | |
| VINYL ACETATE | 8.44 | 2 | 10 | | 84 | 56-151 | | 8.26 | 2 | 20 | |
| CIS-1,2-DICHLOROETHENE | 8.85 | 1 | 10 | | 89 | 81-121 | | 8.96 | 1 | 20 | |
| 2-BUTANONE | 32.7 | 10 | 40 | | 82 | 50-150 | | 31.5 | 4 | 30 | |
| BROMOCHLOROMETHANE | 8.92 | 1 | 10 | | 89 | 85-126 | | 9.05 | 1 | 20 | |
| CHLOROFORM | 8.91 | 1 | 10 | | 89 | 84-125 | | 8.91 | 0 | 20 | |
| 1,1,1-TRICHLOROETHANE | 8.62 | 1 | 10 | | 86 | 82-129 | | 8.93 | 4 | 20 | |
| 2,2-DICHLOROPROPANE | 7.96 | 1 | 10 | | 80 | 79-130 | | 8.27 | 4 | 20 | |
| CARBON TETRACHLORIDE | 8.63 | 1 | 10 | | 86 | 83-135 | | 9.01 | 4 | 20 | |
| 1,1-DICHLOROPROPENE | 8.79 | 1 | 10 | | 88 | 85-127 | | 8.89 | 1 | 20 | |
| 1,2-DICHLOROETHANE | 9 | 1 | 10 | | 90 | 84-126 | | 8.7 | 3 | 20 | |
| BENZENE | 8.61 | 1 | 10 | | 86 | 82-122 | | 8.85 | 3 | 20 | |
| TRICHLOROETHENE | 8.73 | 1 | 10 | | 87 | 82-121 | | 9.03 | 3 | 20 | |
| 1,2-DICHLOROPROPANE | 9.18 | 1 | 10 | | 92 | 81-121 | | 9.1 | 1 | 20 | |
| DIBROMOMETHANE | 9.37 | 1 | 10 | | 94 | 81-125 | | 8.99 | 4 | 20 | |
| BROMODICHLOROMETHANE | 8.97 | 1 | 10 | | 90 | 82-120 | | 9.06 | 1 | 20 | |
| CIS-1,3-DICHLOROPROPENE | 8.97 | 1 | 10 | | 90 | 79-120 | | 9.11 | 2 | 20 | |
| 4-METHYL-2-PENTANONE | 36.5 | 10 | 40 | | 91 | 50-150 | | 35.4 | 3 | 30 | |
| TOLUENE | 8.75 | 1 | 10 | | 87 | 83-121 | | 8.66 | 1 | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 8.82 | 1 | 10 | | 88 | 78-113 | | 8.83 | 0 | 20 | |
| 1,1,2-TRICHLOROETHANE | 9.3 | 1 | 10 | | 93 | 82-122 | | 9.25 | 1 | 20 | |
| 2-HEXANONE | 39 | 10 | 40 | | 98 | 50-150 | | 36.6 | 6 | 30 | |
| TETRACHLOROETHENE | 9.2 | 1 | 10 | | 92 | 79-136 | | 9.32 | 1 | 20 | |
| 1,3-DICHLOROPROPANE | 9.41 | 1 | 10 | | 94 | 80-126 | | 9.16 | 3 | 20 | |
| DIBROMOCHLOROMETHANE | 9.97 | 1 | 10 | | 100 | 80-123 | | 9.74 | 2 | 20 | |
| 1,2-DIBROMOETHANE | 9.6 | 1 | 10 | | 96 | 85-124 | | 9.41 | 2 | 20 | |

# QC BATCH REPORT

Batch ID: **VL160325-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160325-3** Units: **UG/KG** Analysis Date: **3/26/2016 01:44**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 9.09 | 1 | 10 | | 91 | 77-135 | | 9.27 | 2 | 20 | |
| CHLOROBENZENE | 9.4 | 1 | 10 | | 94 | 82-121 | | 9.48 | 1 | 20 | |
| 1,1,1,2-TETRACHLOROETHANE | 9.5 | 1 | 10 | | 95 | 85-128 | | 9.46 | 0 | 20 | |
| ETHYLBENZENE | 9.35 | 1 | 10 | | 94 | 83-126 | | 9.39 | 0 | 20 | |
| M+P-XYLENE | 17.9 | 1 | 20 | | 90 | 82-129 | | 18 | 0 | 20 | |
| O-XYLENE | 9.4 | 1 | 10 | | 94 | 87-132 | | 9.4 | 0 | 20 | |
| STYRENE | 9.95 | 1 | 10 | | 100 | 82-123 | | 9.77 | 2 | 20 | |
| BROMOFORM | 9.97 | 1 | 10 | | 100 | 79-118 | | 9.4 | 6 | 20 | |
| ISOPROPYLBENZENE | 9.49 | 1 | 10 | | 95 | 75-132 | | 9.67 | 2 | 20 | |
| 1,2,3-TRICHLOROPROPANE | 9.37 | 1 | 10 | | 94 | 77-128 | | 9.72 | 4 | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 9.57 | 1 | 10 | | 96 | 74-130 | | 9.43 | 1 | 20 | |
| BROMOBENZENE | 9.38 | 1 | 10 | | 94 | 78-124 | | 9.37 | 0 | 20 | |
| N-PROPYLBENZENE | 9.2 | 1 | 10 | | 92 | 75-134 | | 9.37 | 2 | 20 | |
| 2-CHLOROTOLUENE | 9.26 | 1 | 10 | | 93 | 77-128 | | 9.41 | 2 | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 9.1 | 1 | 10 | | 91 | 77-131 | | 9.46 | 4 | 20 | |
| 4-CHLOROTOLUENE | 9.41 | 1 | 10 | | 94 | 79-128 | | 9.46 | 1 | 20 | |
| TERT-BUTYLBENZENE | 9.1 | 1 | 10 | | 91 | 76-134 | | 9.53 | 5 | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 9.16 | 1 | 10 | | 92 | 80-138 | | 9.23 | 1 | 20 | |
| SEC-BUTYLBENZENE | 9.27 | 1 | 10 | | 93 | 73-135 | | 9.64 | 4 | 20 | |
| 1,3-DICHLOROBENZENE | 9.4 | 1 | 10 | | 94 | 79-126 | | 9.45 | 1 | 20 | |
| P-ISOPROPYLTOLUENE | 9.58 | 1 | 10 | | 96 | 72-132 | | 9.72 | 1 | 20 | |
| 1,4-DICHLOROBENZENE | 9.27 | 1 | 10 | | 93 | 81-125 | | 9.66 | 4 | 20 | |
| N-BUTYLBENZENE | 9.67 | 1 | 10 | | 97 | 77-141 | | 9.89 | 2 | 20 | |
| 1,2-DICHLOROBENZENE | 9.64 | 1 | 10 | | 96 | 82-128 | | 9.66 | 0 | 20 | |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.1 | 2 | 10 | | 101 | 64-134 | | 9.62 | 5 | 20 | |
| 1,2,4-TRICHLOROBENZENE | 9.04 | 1 | 10 | | 90 | 80-128 | | 8.96 | 1 | 20 | |
| HEXACHLOROBUTADIENE | 10.4 | 1 | 10 | | 104 | 70-136 | | 10.9 | 4 | 20 | |
| NAPHTHALENE | 9.25 | 1 | 10 | | 92 | 78-125 | | 8.67 | 6 | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.56 | 1 | 10 | | 96 | 79-131 | | 9.53 | 0 | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 25.2 | | 25 | | 101 | 80-124 | | | 0 | | |
| Surr: TOLUENE-D8 | 25.1 | | 25 | | 100 | 81-119 | | | 1 | | |
| Surr: 4-BROMOFLUOROBENZENE | 24.6 | | 25 | | 99 | 78-129 | | | 0 | | |

**LCSD** Sample ID: **VL160325-6** Units: **UG/KG** Analysis Date: **3/25/2016 20:25**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 910 | 100 | 1000 | | 91 | 80-120 | | 903 | 1 | 20 | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160325-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160325-3** Units: **UG/KG** Analysis Date: **3/26/2016 02:26**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | ND | 1 | | | | | | | | | |
| GASOLINE RANGE ORGANICS | ND | 100 | | | | | | | | | |
| CHLOROMETHANE | ND | 1 | | | | | | | | | |
| VINYL CHLORIDE | ND | 1 | | | | | | | | | |
| BROMOMETHANE | ND | 1 | | | | | | | | | |
| CHLOROETHANE | ND | 1 | | | | | | | | | |
| TRICHLOROFLUOROMETHANE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | 1 | | | | | | | | | |
| ACETONE | ND | 10 | | | | | | | | | |
| IODOMETHANE | ND | 1 | | | | | | | | | |
| CARBON DISULFIDE | ND | 1 | | | | | | | | | |
| METHYLENE CHLORIDE | ND | 1 | | | | | | | | | |
| TRANS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| METHYL TERTIARY BUTYL ETHER | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| VINYL ACETATE | ND | 2 | | | | | | | | | |
| CIS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 2-BUTANONE | ND | 10 | | | | | | | | | |
| BROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |
| CHLOROFORM | ND | 1 | | | | | | | | | |
| 1,1,1-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| CARBON TETRACHLORIDE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| BENZENE | ND | 1 | | | | | | | | | |
| TRICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOMETHANE | ND | 1 | | | | | | | | | |
| BROMODICHLOROMETHANE | ND | 1 | | | | | | | | | |
| CIS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 4-METHYL-2-PENTANONE | ND | 10 | | | | | | | | | |
| TOLUENE | ND | 1 | | | | | | | | | |
| TRANS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2-HEXANONE | ND | 10 | | | | | | | | | |
| TETRACHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160325-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160325-3** Units: **UG/KG** Analysis Date: **3/26/2016 02:26**

Client ID: Run ID: **VL160325-3A** Prep Date: **3/25/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-DIBROMOETHANE | ND | 1 | | | | | | | | | |
| 1-CHLOROHEXANE | ND | 1 | | | | | | | | | |
| CHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| ETHYLBENZENE | ND | 1 | | | | | | | | | |
| M+P-XYLENE | ND | 1 | | | | | | | | | |
| O-XYLENE | ND | 1 | | | | | | | | | |
| STYRENE | ND | 1 | | | | | | | | | |
| BROMOFORM | ND | 1 | | | | | | | | | |
| ISOPROPYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROPROPANE | ND | 1 | | | | | | | | | |
| 1,1,2,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| BROMOBENZENE | ND | 1 | | | | | | | | | |
| N-PROPYLBENZENE | ND | 1 | | | | | | | | | |
| 2-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| 1,3,5-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| 4-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| TERT-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| SEC-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| P-ISOPROPYLTOLUENE | ND | 1 | | | | | | | | | |
| 1,4-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| N-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | 2 | | | | | | | | | |
| 1,2,4-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| HEXACHLOROBUTADIENE | ND | 1 | | | | | | | | | |
| NAPHTHALENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| Surr: DIBROMOFLUOROMETHANE | 24.9 | | 25 | | 100 | 80-124 | | | | | |
| Surr: TOLUENE-D8 | 24.9 | | 25 | | 100 | 81-119 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 25.5 | | 25 | | 102 | 78-129 | | | | | |

**The following samples were analyzed in this batch:**

| | | |
|---|---|---|
| 1603307-7 | 1603307-9 | 1603307-10 |
| 1603307-11 | 1603307-12 | 1603307-13 |
| 1603307-14 | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160326-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160326-3** Units: **UG/KG** Analysis Date: **3/26/2016 12:05**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 9.94 | 1 | 10 | | 99 | 38-131 | | | | 20 | |
| CHLOROMETHANE | 9.09 | 1 | 10 | | 91 | 62-141 | | | | 20 | |
| VINYL CHLORIDE | 9.51 | 1 | 10 | | 95 | 77-124 | | | | 20 | |
| BROMOMETHANE | 9.67 | 1 | 10 | | 97 | 76-133 | | | | 20 | |
| CHLOROETHANE | 9.35 | 1 | 10 | | 94 | 81-130 | | | | 20 | |
| TRICHLOROFLUOROMETHANE | 9.78 | 1 | 10 | | 98 | 84-146 | | | | 20 | |
| 1,1-DICHLOROETHENE | 9.97 | 1 | 10 | | 100 | 75-126 | | | | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 9.74 | 1 | 10 | | 97 | 71-144 | | | | 20 | |
| ACETONE | 32 | 10 | 40 | | 80 | 50-150 | | | | 30 | |
| IODOMETHANE | 9.3 | 1 | 10 | | 93 | 76-116 | | | | 20 | |
| CARBON DISULFIDE | 10.4 | 1 | 10 | | 104 | 68-129 | | | | 20 | |
| METHYLENE CHLORIDE | 9.01 | 1 | 10 | | 90 | 22-146 | | | | 20 | |
| TRANS-1,2-DICHLOROETHENE | 10.2 | 1 | 10 | | 102 | 76-135 | | | | 20 | |
| METHYL TERTIARY BUTYL ETHER | 19.7 | 1 | 20 | | 98 | 75-125 | | | | 20 | |
| 1,1-DICHLOROETHANE | 10.3 | 1 | 10 | | 103 | 77-131 | | | | 20 | |
| VINYL ACETATE | 10.1 | 2 | 10 | | 101 | 56-151 | | | | 20 | |
| CIS-1,2-DICHLOROETHENE | 10.1 | 1 | 10 | | 101 | 81-121 | | | | 20 | |
| 2-BUTANONE | 33.7 | 10 | 40 | | 84 | 50-150 | | | | 30 | |
| BROMOCHLOROMETHANE | 9.98 | 1 | 10 | | 100 | 85-126 | | | | 20 | |
| CHLOROFORM | 9.94 | 1 | 10 | | 99 | 84-125 | | | | 20 | |
| 1,1,1-TRICHLOROETHANE | 10.1 | 1 | 10 | | 101 | 82-129 | | | | 20 | |
| 2,2-DICHLOROPROPANE | 11.4 | 1 | 10 | | 114 | 79-130 | | | | 20 | |
| CARBON TETRACHLORIDE | 10.3 | 1 | 10 | | 103 | 83-135 | | | | 20 | |
| 1,1-DICHLOROPROPENE | 10.2 | 1 | 10 | | 102 | 85-127 | | | | 20 | |
| 1,2-DICHLOROETHANE | 9.73 | 1 | 10 | | 97 | 84-126 | | | | 20 | |
| BENZENE | 10 | 1 | 10 | | 100 | 82-122 | | | | 20 | |
| TRICHLOROETHENE | 9.97 | 1 | 10 | | 100 | 82-121 | | | | 20 | |
| 1,2-DICHLOROPROPANE | 9.91 | 1 | 10 | | 99 | 81-121 | | | | 20 | |
| DIBROMOMETHANE | 9.69 | 1 | 10 | | 97 | 81-125 | | | | 20 | |
| BROMODICHLOROMETHANE | 9.81 | 1 | 10 | | 98 | 82-120 | | | | 20 | |
| CIS-1,3-DICHLOROPROPENE | 9.98 | 1 | 10 | | 100 | 79-120 | | | | 20 | |
| 4-METHYL-2-PENTANONE | 36.6 | 10 | 40 | | 92 | 50-150 | | | | 30 | |
| TOLUENE | 9.52 | 1 | 10 | | 95 | 83-121 | | | | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 10.1 | 1 | 10 | | 101 | 78-113 | | | | 20 | |
| 1,1,2-TRICHLOROETHANE | 9.87 | 1 | 10 | | 99 | 82-122 | | | | 20 | |
| 2-HEXANONE | 37.9 | 10 | 40 | | 95 | 50-150 | | | | 30 | |
| TETRACHLOROETHENE | 10.4 | 1 | 10 | | 104 | 79-136 | | | | 20 | |
| 1,3-DICHLOROPROPANE | 9.72 | 1 | 10 | | 97 | 80-126 | | | | 20 | |
| DIBROMOCHLOROMETHANE | 10.2 | 1 | 10 | | 102 | 80-123 | | | | 20 | |
| 1,2-DIBROMOETHANE | 10 | 1 | 10 | | 100 | 85-124 | | | | 20 | |

# QC BATCH REPORT

Batch ID: **VL160326-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160326-3** Units: **UG/KG** Analysis Date: **3/26/2016 12:05**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 9.84 | 1 | 10 | | 98 | 77-135 | | | | 20 | |
| CHLOROBENZENE | 9.97 | 1 | 10 | | 100 | 82-121 | | | | 20 | |
| 1,1,1,2-TETRACHLOROETHANE | 9.93 | 1 | 10 | | 99 | 85-128 | | | | 20 | |
| ETHYLBENZENE | 9.96 | 1 | 10 | | 100 | 83-126 | | | | 20 | |
| M+P-XYLENE | 18.8 | 1 | 20 | | 94 | 82-129 | | | | 20 | |
| O-XYLENE | 9.82 | 1 | 10 | | 98 | 87-132 | | | | 20 | |
| STYRENE | 10.2 | 1 | 10 | | 102 | 82-123 | | | | 20 | |
| BROMOFORM | 9.85 | 1 | 10 | | 98 | 79-118 | | | | 20 | |
| ISOPROPYLBENZENE | 10 | 1 | 10 | | 100 | 75-132 | | | | 20 | |
| 1,2,3-TRICHLOROPROPANE | 9.25 | 1 | 10 | | 93 | 77-128 | | | | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 9.72 | 1 | 10 | | 97 | 74-130 | | | | 20 | |
| BROMOBENZENE | 9.82 | 1 | 10 | | 98 | 78-124 | | | | 20 | |
| N-PROPYLBENZENE | 9.92 | 1 | 10 | | 99 | 75-134 | | | | 20 | |
| 2-CHLOROTOLUENE | 9.9 | 1 | 10 | | 99 | 77-128 | | | | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 9.86 | 1 | 10 | | 99 | 77-131 | | | | 20 | |
| 4-CHLOROTOLUENE | 9.93 | 1 | 10 | | 99 | 79-128 | | | | 20 | |
| TERT-BUTYLBENZENE | 9.78 | 1 | 10 | | 98 | 76-134 | | | | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 9.66 | 1 | 10 | | 97 | 80-138 | | | | 20 | |
| SEC-BUTYLBENZENE | 10 | 1 | 10 | | 100 | 73-135 | | | | 20 | |
| 1,3-DICHLOROBENZENE | 9.89 | 1 | 10 | | 99 | 79-126 | | | | 20 | |
| P-ISOPROPYLTOLUENE | 10.1 | 1 | 10 | | 101 | 72-132 | | | | 20 | |
| 1,4-DICHLOROBENZENE | 9.96 | 1 | 10 | | 100 | 81-125 | | | | 20 | |
| N-BUTYLBENZENE | 10.4 | 1 | 10 | | 104 | 77-141 | | | | 20 | |
| 1,2-DICHLOROBENZENE | 10 | 1 | 10 | | 100 | 82-128 | | | | 20 | |
| 1,2-DIBROMO-3-CHLOROPROPANE | 9.8 | 2 | 10 | | 98 | 64-134 | | | | 20 | |
| 1,2,4-TRICHLOROBENZENE | 9.01 | 1 | 10 | | 90 | 80-128 | | | | 20 | |
| HEXACHLOROBUTADIENE | 11.3 | 1 | 10 | | 113 | 70-136 | | | | 20 | |
| NAPHTHALENE | 8.15 | 1 | 10 | | 82 | 78-125 | | | | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.12 | 1 | 10 | | 91 | 79-131 | | | | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 24.9 | | 25 | | 100 | 80-124 | | | | | |
| Surr: TOLUENE-D8 | 25.2 | | 25 | | 101 | 81-119 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 24.6 | | 25 | | 98 | 78-129 | | | | | |

**LCS** Sample ID: **VL160326-6** Units: **UG/KG** Analysis Date: **3/26/2016 13:08**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 1150 | 100 | 1000 | | 115 | 80-120 | | | | 20 | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160326-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160326-3** Units: **UG/KG** Analysis Date: **3/26/2016 12:26**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 9.66 | 1 | 10 | | 97 | 38-131 | | 9.94 | 3 | 20 | |
| CHLOROMETHANE | 9.39 | 1 | 10 | | 94 | 62-141 | | 9.09 | 3 | 20 | |
| VINYL CHLORIDE | 9.83 | 1 | 10 | | 98 | 77-124 | | 9.51 | 3 | 20 | |
| BROMOMETHANE | 9.59 | 1 | 10 | | 96 | 76-133 | | 9.67 | 1 | 20 | |
| CHLOROETHANE | 9.47 | 1 | 10 | | 95 | 81-130 | | 9.35 | 1 | 20 | |
| TRICHLOROFLUOROMETHANE | 10 | 1 | 10 | | 100 | 84-146 | | 9.78 | 3 | 20 | |
| 1,1-DICHLOROETHENE | 9.44 | 1 | 10 | | 94 | 75-126 | | 9.97 | 5 | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 9.39 | 1 | 10 | | 94 | 71-144 | | 9.74 | 4 | 20 | |
| ACETONE | 31.5 | 10 | 40 | | 79 | 50-150 | | 32 | 1 | 30 | |
| IODOMETHANE | 9.33 | 1 | 10 | | 93 | 76-116 | | 9.3 | 0 | 20 | |
| CARBON DISULFIDE | 9.87 | 1 | 10 | | 99 | 68-129 | | 10.4 | 5 | 20 | |
| METHYLENE CHLORIDE | 8.67 | 1 | 10 | | 87 | 22-146 | | 9.01 | 4 | 20 | |
| TRANS-1,2-DICHLOROETHENE | 9.82 | 1 | 10 | | 98 | 76-135 | | 10.2 | 4 | 20 | |
| METHYL TERTIARY BUTYL ETHER | 19.3 | 1 | 20 | | 96 | 75-125 | | 19.7 | 2 | 20 | |
| 1,1-DICHLOROETHANE | 9.54 | 1 | 10 | | 95 | 77-131 | | 10.3 | 7 | 20 | |
| VINYL ACETATE | 10.7 | 2 | 10 | | 107 | 56-151 | | 10.1 | 6 | 20 | |
| CIS-1,2-DICHLOROETHENE | 9.81 | 1 | 10 | | 98 | 81-121 | | 10.1 | 3 | 20 | |
| 2-BUTANONE | 35.4 | 10 | 40 | | 88 | 50-150 | | 33.7 | 5 | 30 | |
| BROMOCHLOROMETHANE | 9.97 | 1 | 10 | | 100 | 85-126 | | 9.98 | 0 | 20 | |
| CHLOROFORM | 9.65 | 1 | 10 | | 97 | 84-125 | | 9.94 | 3 | 20 | |
| 1,1,1-TRICHLOROETHANE | 9.58 | 1 | 10 | | 96 | 82-129 | | 10.1 | 5 | 20 | |
| 2,2-DICHLOROPROPANE | 11.2 | 1 | 10 | | 112 | 79-130 | | 11.4 | 2 | 20 | |
| CARBON TETRACHLORIDE | 9.74 | 1 | 10 | | 97 | 83-135 | | 10.3 | 6 | 20 | |
| 1,1-DICHLOROPROPENE | 9.67 | 1 | 10 | | 97 | 85-127 | | 10.2 | 6 | 20 | |
| 1,2-DICHLOROETHANE | 9.56 | 1 | 10 | | 96 | 84-126 | | 9.73 | 2 | 20 | |
| BENZENE | 9.44 | 1 | 10 | | 94 | 82-122 | | 10 | 6 | 20 | |
| TRICHLOROETHENE | 9.6 | 1 | 10 | | 96 | 82-121 | | 9.97 | 4 | 20 | |
| 1,2-DICHLOROPROPANE | 9.72 | 1 | 10 | | 97 | 81-121 | | 9.91 | 2 | 20 | |
| DIBROMOMETHANE | 9.76 | 1 | 10 | | 98 | 81-125 | | 9.69 | 1 | 20 | |
| BROMODICHLOROMETHANE | 9.83 | 1 | 10 | | 98 | 82-120 | | 9.81 | 0 | 20 | |
| CIS-1,3-DICHLOROPROPENE | 10.2 | 1 | 10 | | 102 | 79-120 | | 9.98 | 2 | 20 | |
| 4-METHYL-2-PENTANONE | 39 | 10 | 40 | | 97 | 50-150 | | 36.6 | 6 | 30 | |
| TOLUENE | 9.38 | 1 | 10 | | 94 | 83-121 | | 9.52 | 1 | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 10.5 | 1 | 10 | | 105 | 78-113 | | 10.1 | 3 | 20 | |
| 1,1,2-TRICHLOROETHANE | 9.97 | 1 | 10 | | 100 | 82-122 | | 9.87 | 1 | 20 | |
| 2-HEXANONE | 40.1 | 10 | 40 | | 100 | 50-150 | | 37.9 | 6 | 30 | |
| TETRACHLOROETHENE | 10.2 | 1 | 10 | | 102 | 79-136 | | 10.4 | 2 | 20 | |
| 1,3-DICHLOROPROPANE | 9.82 | 1 | 10 | | 98 | 80-126 | | 9.72 | 1 | 20 | |
| DIBROMOCHLOROMETHANE | 10.6 | 1 | 10 | | 106 | 80-123 | | 10.2 | 3 | 20 | |
| 1,2-DIBROMOETHANE | 10.3 | 1 | 10 | | 103 | 85-124 | | 10 | 3 | 20 | |

# QC BATCH REPORT

Batch ID: **VL160326-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160326-3** Units: **UG/KG** Analysis Date: **3/26/2016 12:26**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 9.71 | 1 | 10 | | 97 | 77-135 | | 9.84 | 1 | 20 | |
| CHLOROBENZENE | 10.1 | 1 | 10 | | 101 | 82-121 | | 9.97 | 1 | 20 | |
| 1,1,1,2-TETRACHLOROETHANE | 10.2 | 1 | 10 | | 102 | 85-128 | | 9.93 | 3 | 20 | |
| ETHYLBENZENE | 10.1 | 1 | 10 | | 101 | 83-126 | | 9.96 | 1 | 20 | |
| M+P-XYLENE | 19.2 | 1 | 20 | | 96 | 82-129 | | 18.8 | 2 | 20 | |
| O-XYLENE | 10.1 | 1 | 10 | | 101 | 87-132 | | 9.82 | 3 | 20 | |
| STYRENE | 10.4 | 1 | 10 | | 104 | 82-123 | | 10.2 | 3 | 20 | |
| BROMOFORM | 10.2 | 1 | 10 | | 102 | 79-118 | | 9.85 | 4 | 20 | |
| ISOPROPYLBENZENE | 10.2 | 1 | 10 | | 102 | 75-132 | | 10 | 2 | 20 | |
| 1,2,3-TRICHLOROPROPANE | 10.2 | 1 | 10 | | 102 | 77-128 | | 9.25 | 10 | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 10.3 | 1 | 10 | | 103 | 74-130 | | 9.72 | 5 | 20 | |
| BROMOBENZENE | 10.4 | 1 | 10 | | 104 | 78-124 | | 9.82 | 6 | 20 | |
| N-PROPYLBENZENE | 10.2 | 1 | 10 | | 102 | 75-134 | | 9.92 | 3 | 20 | |
| 2-CHLOROTOLUENE | 10.5 | 1 | 10 | | 105 | 77-128 | | 9.9 | 6 | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 10.3 | 1 | 10 | | 103 | 77-131 | | 9.86 | 4 | 20 | |
| 4-CHLOROTOLUENE | 10.7 | 1 | 10 | | 107 | 79-128 | | 9.93 | 7 | 20 | |
| TERT-BUTYLBENZENE | 10.3 | 1 | 10 | | 103 | 76-134 | | 9.78 | 5 | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 10.1 | 1 | 10 | | 101 | 80-138 | | 9.66 | 5 | 20 | |
| SEC-BUTYLBENZENE | 10.1 | 1 | 10 | | 101 | 73-135 | | 10 | 1 | 20 | |
| 1,3-DICHLOROBENZENE | 10.5 | 1 | 10 | | 105 | 79-126 | | 9.89 | 6 | 20 | |
| P-ISOPROPYLTOLUENE | 10.4 | 1 | 10 | | 104 | 72-132 | | 10.1 | 3 | 20 | |
| 1,4-DICHLOROBENZENE | 10.3 | 1 | 10 | | 103 | 81-125 | | 9.96 | 3 | 20 | |
| N-BUTYLBENZENE | 11 | 1 | 10 | | 110 | 77-141 | | 10.4 | 5 | 20 | |
| 1,2-DICHLOROBENZENE | 10.6 | 1 | 10 | | 106 | 82-128 | | 10 | 6 | 20 | |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.4 | 2 | 10 | | 104 | 64-134 | | 9.8 | 6 | 20 | |
| 1,2,4-TRICHLOROBENZENE | 9.56 | 1 | 10 | | 96 | 80-128 | | 9.01 | 6 | 20 | |
| HEXACHLOROBUTADIENE | 11.3 | 1 | 10 | | 113 | 70-136 | | 11.3 | 1 | 20 | |
| NAPHTHALENE | 8.79 | 1 | 10 | | 88 | 78-125 | | 8.15 | 8 | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.62 | 1 | 10 | | 96 | 79-131 | | 9.12 | 5 | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 24.7 | | 25 | | 99 | 80-124 | | | 1 | | |
| Surr: TOLUENE-D8 | 25.1 | | 25 | | 100 | 81-119 | | | 0 | | |
| Surr: 4-BROMOFLUOROBENZENE | 25 | | 25 | | 100 | 78-129 | | | 2 | | |

**LCSD** Sample ID: **VL160326-6** Units: **UG/KG** Analysis Date: **3/26/2016 13:29**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 1100 | 100 | 1000 | | 110 | 80-120 | | 1150 | 4 | 20 | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160326-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160326-6** Units: **UG/KG** Analysis Date: **3/26/2016 14:33**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | ND | 1 | | | | | | | | | |
| GASOLINE RANGE ORGANICS | ND | 100 | | | | | | | | | |
| CHLOROMETHANE | ND | 1 | | | | | | | | | |
| VINYL CHLORIDE | ND | 1 | | | | | | | | | |
| BROMOMETHANE | ND | 1 | | | | | | | | | |
| CHLOROETHANE | ND | 1 | | | | | | | | | |
| TRICHLOROFLUOROMETHANE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | 1 | | | | | | | | | |
| ACETONE | ND | 10 | | | | | | | | | |
| IODOMETHANE | ND | 1 | | | | | | | | | |
| CARBON DISULFIDE | ND | 1 | | | | | | | | | |
| METHYLENE CHLORIDE | ND | 1 | | | | | | | | | |
| TRANS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| METHYL TERTIARY BUTYL ETHER | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| VINYL ACETATE | ND | 2 | | | | | | | | | |
| CIS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 2-BUTANONE | ND | 10 | | | | | | | | | |
| BROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |
| CHLOROFORM | ND | 1 | | | | | | | | | |
| 1,1,1-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| CARBON TETRACHLORIDE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| BENZENE | ND | 1 | | | | | | | | | |
| TRICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOMETHANE | ND | 1 | | | | | | | | | |
| BROMODICHLOROMETHANE | ND | 1 | | | | | | | | | |
| CIS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 4-METHYL-2-PENTANONE | ND | 10 | | | | | | | | | |
| TOLUENE | ND | 1 | | | | | | | | | |
| TRANS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2-HEXANONE | ND | 10 | | | | | | | | | |
| TETRACHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160326-3-1** Instrument ID: **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160326-6** Units: **UG/KG** Analysis Date: **3/26/2016 14:33**

Client ID: Run ID: **VL160326-3A** Prep Date: **3/26/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-DIBROMOETHANE | ND | 1 | | | | | | | | | |
| 1-CHLOROHEXANE | ND | 1 | | | | | | | | | |
| CHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| ETHYLBENZENE | ND | 1 | | | | | | | | | |
| M+P-XYLENE | ND | 1 | | | | | | | | | |
| O-XYLENE | ND | 1 | | | | | | | | | |
| STYRENE | ND | 1 | | | | | | | | | |
| BROMOFORM | ND | 1 | | | | | | | | | |
| ISOPROPYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROPROPANE | ND | 1 | | | | | | | | | |
| 1,1,2,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| BROMOBENZENE | ND | 1 | | | | | | | | | |
| N-PROPYLBENZENE | ND | 1 | | | | | | | | | |
| 2-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| 1,3,5-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| 4-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| TERT-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| SEC-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| P-ISOPROPYLTOLUENE | ND | 1 | | | | | | | | | |
| 1,4-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| N-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | 2 | | | | | | | | | |
| 1,2,4-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| HEXACHLOROBUTADIENE | ND | 1 | | | | | | | | | |
| NAPHTHALENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| Surr: DIBROMOFLUOROMETHANE | 24.7 | | 25 | | 99 | 80-124 | | | | | |
| Surr: TOLUENE-D8 | 25.3 | | 25 | | 101 | 81-119 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 25.8 | | 25 | | 103 | 78-129 | | | | | |

**The following samples were analyzed in this batch:**

| | | |
|---|---|---|
| 1603307-6 | 1603307-8 | 1603307-15 |
| 1603307-16 | 1603307-17 | 1603307-18 |
| 1603307-19 | 1603307-20 | |

**Client:** Braun Intertec
**Work Order:** 1603307
**Project:** B1601155 Hwy 1804 Additional

# QC BATCH REPORT

Batch ID: **VL160408-3-2** Instrument ID: **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160408-3** Units: **UG/L** Analysis Date: **4/8/2016 10:52**
Client ID: Run ID: **VL160408-3A** Prep Date: **4/8/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRIMETHYLBENZENE | 9.8 | 1 | 10 | | 98 | 80-117 | | | | 20 | |

**LCSD** Sample ID: **VL160408-3** Units: **UG/L** Analysis Date: **4/8/2016 11:14**
Client ID: Run ID: **VL160408-3A** Prep Date: **4/8/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRIMETHYLBENZENE | 9.63 | 1 | 10 | | 96 | 80-117 | | 9.8 | 2 | 20 | |

**MB** Sample ID: **VL160408-3** Units: **UG/L** Analysis Date: **4/8/2016 11:59**
Client ID: Run ID: **VL160408-3A** Prep Date: **4/8/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |

**The following samples were analyzed in this batch:** 1603307-8

Thursday, March 31, 2016

Josh Kadrmas
Braun Intertec
1341 South 20th St
Bismarck, ND 58504

Re: ALS Workorder: 1603346
Project Name: DOWL Engineering 1804
Project Number: B1601155

Dear Mr. Kadrmas:

Ten water samples were received from Braun Intertec, on 3/18/2016. The samples were scheduled for the following analyses:

| |
|---|
| GC/MS Volatiles |
| Total Extractable Petroleum Hydrocarbons (Diesel) |

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Julie Ellingson
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

| ALS Environmental – Fort Collins | |
|---|---|
| | |
| Accreditation Body | License or Certification Number |
| Alaska (AK) | UST-086 |
| Alaska (AK) | CO01099 |
| Arizona (AZ) | AZ0742 |
| California (CA) | 06251CA |
| Colorado (CO) | CO01099 |
| Connecticut (CT) | PH-0232 |
| Florida (FL) | E87914 |
| Idaho (ID) | CO01099 |
| Kansas (KS) | E-10381 |
| Kentucky (KY) | 90137 |
| L-A-B (DoD ELAP/ISO 170250) | L2257 |
| Louisiana (LA) | 05057 |
| Maryland (MD) | 285 |
| Missouri (MO) | 175 |
| Nebraska(NE) | NE-OS-24-13 |
| Nevada (NV) | CO000782008A |
| New York (NY) | 12036 |
| North Dakota (ND) | R-057 |
| Oklahoma (OK) | 1301 |
| Pennsylvania (PA) | 68-03116 |
| Tennessee (TN) | 2976 |
| Texas (TX) | T104704241 |
| Utah (UT) | CO01099 |
| Washington (WA) | C1280 |

# 1603346

**GC/MS Volatiles:**
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

- Samples -1, -7 and -8 had a pH > 2 at the time of analysis. All other samples had a pH < 2.
- All compounds in the daily (continuing) calibration verifications were within 20%D with the exceptions of 2,2-dichloropropane and hexachlorobutadiene which were high. These compounds were not detected in the associated samples.
- The method blank and acetone detected above the reporting limit. This compound was detected in the associated samples, so the data were flagged.

All remaining acceptance criteria were met.

**DRO:**
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated for dro extends from C10 to C21 and motor oil extends from C21-C32.

Surrogate recoveries could not be reported for samples 1603346-3 and -3DUP due to the dilution needed to bring the target analyte into the linear range of the instrument.

All remaining acceptance criteria were met.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

**OrderNum:** 1603346
**Client Name:** Braun Intertec
**Client Project Name:** DOWL Engineering 1804
**Client Project Number:** B1601155
**Client PO Number:**

| Client Sample Number | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|---|---|---|---|---|---|
| SB-11 | 1603346-1 | | WATER | 17-Mar-16 | 10:15 |
| SB-12 | 1603346-2 | | WATER | 17-Mar-16 | 10:20 |
| SB-13 | 1603346-3 | | WATER | 17-Mar-16 | 10:30 |
| SB-14 | 1603346-4 | | WATER | 17-Mar-16 | 10:40 |
| SB-15 | 1603346-5 | | WATER | 17-Mar-16 | 10:50 |
| SB-16 | 1603346-6 | | WATER | 17-Mar-16 | 12:00 |
| SB-17 | 1603346-7 | | WATER | 17-Mar-16 | 11:45 |
| SB-18 | 1603346-8 | | WATER | 17-Mar-16 | 11:20 |
| SB-19 | 1603346-9 | | WATER | 17-Mar-16 | 11:00 |
| Trip Blank | 1603346-10 | | WATER | 17-Mar-16 | |

# ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.

Turnaround time for samples received Saturday will be calculated beginning from the next business day.

| ALS WORKORDER # | |
|---|---|
| 1603346 | |

| | | | | | |
|---|---|---|---|---|---|
| TURNAROUND TIME | 24 hr | SAMPLER | C Forster | PAGE | 1 of 1 |
| SITE ID | | | | DISPOSAL | BY LAB or RETURN |
| EDD FORMAT | Excel | | | | |
| PURCHASE ORDER | | | | | |
| BILL TO COMPANY | Same | | | | |
| INVOICE ATTN TO | | | | | |
| ADDRESS | | | | | |
| CITY / STATE / ZIP | | | | | |
| PHONE | | | | | |
| FAX | | | | | |
| E-MAIL | | | | | |

| | |
|---|---|
| PROJECT NAME | Dunn Engineering 1804 |
| PROJECT No. | B1601155 |
| COMPANY NAME | Braun Intertec |
| SEND REPORT TO | JKadrmas@Braunintertec.com |
| ADDRESS | 1341 S 20th St |
| CITY / STATE / ZIP | Bismark |
| PHONE | 701.232.7150 |
| FAX | |
| E-MAIL | Same |

PARAMETER/METHOD REQUEST FOR ANALYSIS

| | |
|---|---|
| A | VOC |
| B | TVPH / GRO |
| C | TEPH / DRO |
| D | TEPH / MO |
| E | |
| F | |
| G | |
| H | |
| I | |
| J | |

| LAB ID | FIELD ID | MATRIX | SAMPLE DATE | SAMPLE TIME | # OF BOTTLES | PRESERVATIVE | QC | A | B | C | D | E | F | G | H | I | J | SEE NOTES SECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SB-11 | WT | 3/17 | 1015 | 3 | HCL | | X | | | | | | | | | | |
| 2 | SB-12 | | | 1020 | 6 | | | X | X | X | X | | | | | | | |
| 3 | SB-13 | | | 1030 | 6 | | | | | | | | | | | | | |
| 4 | SB-14 | | | 1040 | 6 | | | | | | | | | | | | | |
| 5 | SB-15 | | | 1050 | 6 | | | | | | | | | | | | | |
| 6 | SB-16 | | | 1200 | 6 | | | | | | | | | | | | | |
| 7 | SB-17 | | | 1145 | 3 | | | X | | | | | | | | | | |
| 8 | SB-18 | | | 1120 | 6 | | | X | X | X | X | | | | | | | |
| 9 | SB-19 | | | 1100 | 6 | | | | | | | | | | | | | |
| 10 | Trip Blank | | | — | 2 | — | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

NOTES

| REPORT LEVEL / QC REQUIRED | |
|---|---|
| | Summary (Standard QC) |
| | LEVEL II (Standard QC) |
| | LEVEL III (Std QC + forms) |
| | LEVEL IV (Std QC + forms + raw |

PRESERVATION KEY: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other

Form 202r9

| | SIGNATURE | PRINTED NAME | DATE | TIME |
|---|---|---|---|---|
| RELINQUISHED BY | [signature] | Christian Forster | 3/17/16 | 1400 |
| RECEIVED BY | C Trimble | C Trimble | 3-18-16 | 1015 |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |

**ALS Environmental - Fort Collins**
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: Braun Intertech  Workorder No: 1603346

Project Manager: JE  Initials: CDT  Date: 3-18-16

| | | | | |
|---|---|---|---|---|
| 1. Does this project require any special handling in addition to standard ALS procedures? | | | YES | (NO) |
| 2. Are custody seals on shipping containers intact? | NONE | | (YES) | NO |
| 3. Are Custody seals on sample containers intact? | (NONE) | | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present or other representative documents? | | | (YES) | NO |
| 5. Are the COC and bottle labels complete and legible? | | | (YES) | NO |
| 6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.) | | | (YES) | NO |
| 7. Were airbills / shipping documents present and/or removable? | DROP OFF | | (YES) | NO |
| 8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles) | (N/A) | | YES | NO |
| 9. Are all aqueous non-preserved samples pH 4-9? | (N/A) | | YES | NO |
| 10. Is there sufficient sample for the requested analyses? | | | (YES) | NO |
| 11. Were all samples placed in the proper containers for the requested analyses? | | | (YES) | NO |
| 12. Are all samples within holding times for the requested analyses? | | | (YES) | NO |
| 13. Were all sample containers received intact? (not broken or leaking, etc.) | | | (YES) | NO |
| 14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ✓ < green pea ____ > green pea | N/A | | YES | (NO) |
| 15. Do any water samples contain sediment? Amount of sediment: ✓ dusting ____ moderate ____ heavy | N/A | | (YES) | NO |
| 16. Were the samples shipped on ice? | | | (YES) | NO |
| 17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4 | RAD ONLY | | (YES) | NO |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cooler #: | 1 | | | | | | | |
| Temperature (°C): | 1.0 | | | | | | | |
| No. of custody seals on cooler: | 1 | | | | | | | |
| DOT Survey/ Acceptance Information — External µR/hr reading: | 9 | | | | | | | |
| Background µR/hr reading: | 8 | | | | | | | |

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

All bottles have a dusting of sediment
Headspace: 1603346-5-3 < } green pea
-6-4 <
-8-3 <
-9-2 <
noted we will avoid using if possible

If applicable, was the client contacted? YES / NO (NA) Contact: _____ Date/Time: _____

**Project Manager Signature / Date:** 3/18/16

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1603346

9-1

Express Airbill

FedEx Tracking Number 8071 0578 8855

0215

Recipient's Copy

1 From

Date 3/17/16

Sender's Name Christian Forsher Phone 701 515.2747

Company Braun Intertec

Address 1341 S 20th St

Dept./Floor/Suite/Room

City Bismarck State ND 58504

2 Your Internal Billing Reference

3 To

Recipient's Name Phone 127 049-015

Company ALS ENVIRONMENTAL GOOK

Address 225 COMMERCE DR

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City FORT COLLINS State CO ZIP 80524-2762

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

0117729674

8071 0578 8855

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

X FedEx First Overnight Earliest next business morning* delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx Standard Overnight Next business afternoon.* Friday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M. Second business morning.* Saturday Delivery NOT available.

FedEx 2Day Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx Express Saver Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak FedEx Box X FedEx Tube Other

6 Special Handling and Delivery Signature Options

SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required Package may be left without obtaining a signature for delivery.

Direct Signature Someone at recipient's address may sign for delivery. Fee applies.

Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry ice, 9, UN 1845 ___ x ___ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Other FedEx Co. Acct. No. Cash/Check

Total Packages Total Weight lbs. Credit Card Auth.

Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800.GoFedEx 1.800.463.3339

1.0

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-11
**Lab ID:** 1603346-1
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:15
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | | **SW8260_25** | | Prep Date: **3/30/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CHLOROMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| VINYL CHLORIDE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| BROMOMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| TRICHLOROFLUOROMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1-DICHLOROETHENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| **ACETONE** | **7.4** | JB | **20** | **UG/L** | 2 | 3/30/2016 17:23 |
| IODOMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CARBON DISULFIDE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| METHYLENE CHLORIDE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| TRANS-1,2-DICHLOROETHENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| METHYL TERTIARY BUTYL ETHER | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1-DICHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| VINYL ACETATE | ND | | 4 | UG/L | 2 | 3/30/2016 17:23 |
| CIS-1,2-DICHLOROETHENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 2-BUTANONE | ND | | 20 | UG/L | 2 | 3/30/2016 17:23 |
| BROMOCHLOROMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CHLOROFORM | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1,1-TRICHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 2,2-DICHLOROPROPANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CARBON TETRACHLORIDE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1-DICHLOROPROPENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2-DICHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| BENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| TRICHLOROETHENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2-DICHLOROPROPANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| DIBROMOMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| BROMODICHLOROMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CIS-1,3-DICHLOROPROPENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 4-METHYL-2-PENTANONE | ND | | 20 | UG/L | 2 | 3/30/2016 17:23 |
| TOLUENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1,2-TRICHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 2-HEXANONE | ND | | 20 | UG/L | 2 | 3/30/2016 17:23 |
| TETRACHLOROETHENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,3-DICHLOROPROPANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| DIBROMOCHLOROMETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2-DIBROMOETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1-CHLOROHEXANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| CHLOROBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| ETHYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| M+P-XYLENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| O-XYLENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-11
**Lab ID:** 1603346-1
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:15
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| STYRENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| BROMOFORM | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| ISOPROPYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2,3-TRICHLOROPROPANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| BROMOBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| N-PROPYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 2-CHLOROTOLUENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 4-CHLOROTOLUENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| TERT-BUTYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| SEC-BUTYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,3-DICHLOROBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| P-ISOPROPYLTOLUENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,4-DICHLOROBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| N-BUTYLBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2-DICHLOROBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 4 | UG/L | 2 | 3/30/2016 17:23 |
| 1,2,4-TRICHLOROBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| HEXACHLOROBUTADIENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| **NAPHTHALENE** | **2.3** | | **2** | **UG/L** | 2 | 3/30/2016 17:23 |
| 1,2,3-TRICHLOROBENZENE | ND | | 2 | UG/L | 2 | 3/30/2016 17:23 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 2 | 3/30/2016 17:23 |
| *Surr: TOLUENE-D8* | *101* | | *85-115* | *%REC* | 2 | 3/30/2016 17:23 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *85-115* | *%REC* | 2 | 3/30/2016 17:23 |
| GASOLINE RANGE ORGANICS | ND | | 200 | UG/L | 2 | 3/30/2016 17:23 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-12
**Lab ID:** 1603346-2
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:20
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | | Prep Date: **3/22/2016** | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 1.3 | MG/L | 1 | 3/25/2016 13:48 |
| MOTOR OIL RANGE ORGANICS | ND | | 1.3 | MG/L | 1 | 3/25/2016 13:48 |
| *Surr: O-TERPHENYL* | *88* | | *63-126* | *%REC* | 1 | 3/25/2016 13:48 |
| **GC/MS Volatiles** | | | **SW8260_25** | | Prep Date: **3/30/2016** | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| CHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| VINYL CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| BROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| CHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| TRICHLOROFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| **ACETONE** | **3.5** | JB | **10** | **UG/L** | 1 | 3/30/2016 18:05 |
| IODOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| CARBON DISULFIDE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| METHYLENE CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| TRANS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| METHYL TERTIARY BUTYL ETHER | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| VINYL ACETATE | ND | | 2 | UG/L | 1 | 3/30/2016 18:05 |
| CIS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 2-BUTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 18:05 |
| BROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| CHLOROFORM | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1,1-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 2,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| CARBON TETRACHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| BENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| TRICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| DIBROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| BROMODICHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| CIS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 4-METHYL-2-PENTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 18:05 |
| TOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1,2-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 2-HEXANONE | ND | | 10 | UG/L | 1 | 3/30/2016 18:05 |
| TETRACHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,3-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| DIBROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2-DIBROMOETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1-CHLOROHEXANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |

**Client:** Braun Intertec
**Project:** B1601155 DOWL Engineering 1804
**Sample ID:** SB-12
**Legal Location:**
**Collection Date:** 3/17/2016 10:20

**Date:** *31-Mar-16*
**Work Order:** 1603346
**Lab ID:** 1603346-2
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| ETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| M+P-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| O-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| STYRENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| BROMOFORM | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| ISOPROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2,3-TRICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| BROMOBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| N-PROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 2-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 4-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| TERT-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| **1,2,4-TRIMETHYLBENZENE** | **0.38** | J | **1** | **UG/L** | 1 | 3/30/2016 18:05 |
| SEC-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,3-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| **P-ISOPROPYLTOLUENE** | **0.58** | J | **1** | **UG/L** | 1 | 3/30/2016 18:05 |
| 1,4-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| N-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 2 | UG/L | 1 | 3/30/2016 18:05 |
| 1,2,4-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| HEXACHLOROBUTADIENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| **NAPHTHALENE** | **1.1** | | **1** | **UG/L** | 1 | 3/30/2016 18:05 |
| 1,2,3-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 18:05 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 1 | 3/30/2016 18:05 |
| *Surr: TOLUENE-D8* | *100* | | *85-115* | *%REC* | 1 | 3/30/2016 18:05 |
| *Surr: 4-BROMOFLUOROBENZENE* | *100* | | *85-115* | *%REC* | 1 | 3/30/2016 18:05 |
| GASOLINE RANGE ORGANICS | ND | | 100 | UG/L | 1 | 3/30/2016 18:05 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-13
**Lab ID:** 1603346-3
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:30
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | Prep Date: **3/22/2016** | | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **2800** | LD | **51** | **MG/L** | 40 | 3/25/2016 17:24 |
| **MOTOR OIL RANGE ORGANICS** | **260** | M | **51** | **MG/L** | 40 | 3/25/2016 17:24 |
| *Surr: O-TERPHENYL* | | X | *63-126* | *%REC* | 40 | 3/25/2016 17:24 |
| **GC/MS Volatiles** | | | **SW8260_25** | Prep Date: **3/30/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| CHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| VINYL CHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| BROMOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| CHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| TRICHLOROFLUOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| ACETONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:30 |
| IODOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| CARBON DISULFIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| METHYLENE CHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| TRANS-1,2-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| METHYL TERTIARY BUTYL ETHER | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1-DICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| VINYL ACETATE | ND | | 200 | UG/L | 100 | 3/30/2016 19:30 |
| CIS-1,2-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 2-BUTANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:30 |
| BROMOCHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| CHLOROFORM | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1,1-TRICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 2,2-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| CARBON TETRACHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,2-DICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| BENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| TRICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,2-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| DIBROMOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| BROMODICHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| CIS-1,3-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 4-METHYL-2-PENTANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:30 |
| TOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1,2-TRICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 2-HEXANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:30 |
| TETRACHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,3-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| DIBROMOCHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,2-DIBROMOETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1-CHLOROHEXANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-13
**Lab ID:** 1603346-3
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:30
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **ETHYLBENZENE** | **860** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| **M+P-XYLENE** | **3000** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| **O-XYLENE** | **91** | J | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| STYRENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| BROMOFORM | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **ISOPROPYLBENZENE** | **130** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 1,2,3-TRICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| BROMOBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **N-PROPYLBENZENE** | **300** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 2-CHLOROTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **1,3,5-TRIMETHYLBENZENE** | **490** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 4-CHLOROTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| TERT-BUTYLBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **1,2,4-TRIMETHYLBENZENE** | **1700** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| **SEC-BUTYLBENZENE** | **57** | J | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 1,3-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **P-ISOPROPYLTOLUENE** | **50** | J | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 1,4-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **N-BUTYLBENZENE** | **110** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 1,2-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 200 | UG/L | 100 | 3/30/2016 19:30 |
| 1,2,4-TRICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| HEXACHLOROBUTADIENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| **NAPHTHALENE** | **890** | | **100** | **UG/L** | 100 | 3/30/2016 19:30 |
| 1,2,3-TRICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:30 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 100 | 3/30/2016 19:30 |
| *Surr: TOLUENE-D8* | *101* | | *85-115* | *%REC* | 100 | 3/30/2016 19:30 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *85-115* | *%REC* | 100 | 3/30/2016 19:30 |
| **GASOLINE RANGE ORGANICS** | **38000** | | **10000** | **UG/L** | 100 | 3/30/2016 19:30 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-14
**Lab ID:** 1603346-4
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:40
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | | Prep Date: **3/22/2016** | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **110** | LD | **2.7** | **MG/L** | 2 | 3/25/2016 18:26 |
| **MOTOR OIL RANGE ORGANICS** | **15** | M | **2.7** | **MG/L** | 2 | 3/25/2016 18:26 |
| *Surr: O-TERPHENYL* | *87* | | *63-126* | *%REC* | 2 | 3/25/2016 18:26 |
| **GC/MS Volatiles** | | | **SW8260_25** | | Prep Date: **3/30/2016** | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| CHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| VINYL CHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| BROMOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| CHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| TRICHLOROFLUOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| ACETONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:51 |
| IODOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| CARBON DISULFIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| METHYLENE CHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| TRANS-1,2-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| METHYL TERTIARY BUTYL ETHER | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1-DICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| VINYL ACETATE | ND | | 200 | UG/L | 100 | 3/30/2016 19:51 |
| CIS-1,2-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 2-BUTANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:51 |
| BROMOCHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| CHLOROFORM | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1,1-TRICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 2,2-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| CARBON TETRACHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,2-DICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| BENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| TRICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,2-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| DIBROMOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| BROMODICHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| CIS-1,3-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 4-METHYL-2-PENTANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:51 |
| TOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1,2-TRICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 2-HEXANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 19:51 |
| TETRACHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,3-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| DIBROMOCHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,2-DIBROMOETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1-CHLOROHEXANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-14
**Lab ID:** 1603346-4
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:40
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **ETHYLBENZENE** | **890** | | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| **M+P-XYLENE** | **860** | | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| **O-XYLENE** | **37** | J | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| STYRENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| BROMOFORM | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **ISOPROPYLBENZENE** | **110** | | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| 1,2,3-TRICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| BROMOBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **N-PROPYLBENZENE** | **270** | | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| 2-CHLOROTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 4-CHLOROTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| TERT-BUTYLBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **1,2,4-TRIMETHYLBENZENE** | **1400** | | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| **SEC-BUTYLBENZENE** | **50** | J | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| 1,3-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **P-ISOPROPYLTOLUENE** | **31** | J | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| 1,4-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **N-BUTYLBENZENE** | **46** | J | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| 1,2-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 200 | UG/L | 100 | 3/30/2016 19:51 |
| 1,2,4-TRICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| HEXACHLOROBUTADIENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| **NAPHTHALENE** | **350** | | **100** | **UG/L** | 100 | 3/30/2016 19:51 |
| 1,2,3-TRICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 19:51 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 100 | 3/30/2016 19:51 |
| *Surr: TOLUENE-D8* | *103* | | *85-115* | *%REC* | 100 | 3/30/2016 19:51 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *85-115* | *%REC* | 100 | 3/30/2016 19:51 |
| **GASOLINE RANGE ORGANICS** | **21000** | | **10000** | **UG/L** | 100 | 3/30/2016 19:51 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-15
**Lab ID:** 1603346-5
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:50
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | | Prep Date: **3/22/2016** | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **21** | LD | **1.3** | **MG/L** | 1 | 3/25/2016 15:21 |
| **MOTOR OIL RANGE ORGANICS** | **6.9** | M | **1.3** | **MG/L** | 1 | 3/25/2016 15:21 |
| *Surr: O-TERPHENYL* | *94* | | *63-126* | *%REC* | 1 | 3/25/2016 15:21 |
| **GC/MS Volatiles** | | | **SW8260_25** | | Prep Date: **3/30/2016** | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| CHLOROMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| VINYL CHLORIDE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| BROMOMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| CHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| TRICHLOROFLUOROMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1-DICHLOROETHENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **ACETONE** | **91** | JB | **100** | **UG/L** | 10 | 3/30/2016 17:44 |
| IODOMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| CARBON DISULFIDE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| METHYLENE CHLORIDE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| TRANS-1,2-DICHLOROETHENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| METHYL TERTIARY BUTYL ETHER | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1-DICHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| VINYL ACETATE | ND | | 20 | UG/L | 10 | 3/30/2016 17:44 |
| CIS-1,2-DICHLOROETHENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 2-BUTANONE | ND | | 100 | UG/L | 10 | 3/30/2016 17:44 |
| BROMOCHLOROMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| CHLOROFORM | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1,1-TRICHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 2,2-DICHLOROPROPANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| CARBON TETRACHLORIDE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1-DICHLOROPROPENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,2-DICHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **BENZENE** | **12** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| TRICHLOROETHENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,2-DICHLOROPROPANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| DIBROMOMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| BROMODICHLOROMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| CIS-1,3-DICHLOROPROPENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 4-METHYL-2-PENTANONE | ND | | 100 | UG/L | 10 | 3/30/2016 17:44 |
| TOLUENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1,2-TRICHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 2-HEXANONE | ND | | 100 | UG/L | 10 | 3/30/2016 17:44 |
| TETRACHLOROETHENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,3-DICHLOROPROPANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| DIBROMOCHLOROMETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,2-DIBROMOETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1-CHLOROHEXANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-15
**Lab ID:** 1603346-5
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 10:50
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **ETHYLBENZENE** | **170** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| **M+P-XYLENE** | **120** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| **O-XYLENE** | **8.9** | J | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| STYRENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| BROMOFORM | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **ISOPROPYLBENZENE** | **27** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| 1,2,3-TRICHLOROPROPANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| BROMOBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **N-PROPYLBENZENE** | **58** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| 2-CHLOROTOLUENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 4-CHLOROTOLUENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| TERT-BUTYLBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **1,2,4-TRIMETHYLBENZENE** | **320** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| **SEC-BUTYLBENZENE** | **9.1** | J | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| 1,3-DICHLOROBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **P-ISOPROPYLTOLUENE** | **7.9** | J | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| 1,4-DICHLOROBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **N-BUTYLBENZENE** | **4.9** | J | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| 1,2-DICHLOROBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 20 | UG/L | 10 | 3/30/2016 17:44 |
| 1,2,4-TRICHLOROBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| HEXACHLOROBUTADIENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| **NAPHTHALENE** | **18** | | **10** | **UG/L** | 10 | 3/30/2016 17:44 |
| 1,2,3-TRICHLOROBENZENE | ND | | 10 | UG/L | 10 | 3/30/2016 17:44 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 10 | 3/30/2016 17:44 |
| *Surr: TOLUENE-D8* | *102* | | *85-115* | *%REC* | 10 | 3/30/2016 17:44 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *85-115* | *%REC* | 10 | 3/30/2016 17:44 |
| **GASOLINE RANGE ORGANICS** | **2100** | | **1000** | **UG/L** | 10 | 3/30/2016 17:44 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-16
**Lab ID:** 1603346-6
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 12:00
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | | Prep Date: **3/22/2016** | PrepBy: **ACK** |
| DIESEL RANGE ORGANICS | ND | | 1.3 | MG/L | 1 | 3/25/2016 15:51 |
| MOTOR OIL RANGE ORGANICS | ND | | 1.3 | MG/L | 1 | 3/25/2016 15:51 |
| *Surr: O-TERPHENYL* | *95* | | *63-126* | *%REC* | 1 | 3/25/2016 15:51 |
| **GC/MS Volatiles** | | | **SW8260_25** | | Prep Date: **3/30/2016** | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| CHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| VINYL CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| BROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| CHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| TRICHLOROFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| ACETONE | ND | | 10 | UG/L | 1 | 3/30/2016 15:37 |
| IODOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| CARBON DISULFIDE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| METHYLENE CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| TRANS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| METHYL TERTIARY BUTYL ETHER | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| VINYL ACETATE | ND | | 2 | UG/L | 1 | 3/30/2016 15:37 |
| CIS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 2-BUTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 15:37 |
| BROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| CHLOROFORM | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1,1-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 2,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| CARBON TETRACHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| BENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| TRICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| DIBROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| BROMODICHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| CIS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 4-METHYL-2-PENTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 15:37 |
| TOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1,2-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 2-HEXANONE | ND | | 10 | UG/L | 1 | 3/30/2016 15:37 |
| TETRACHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,3-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| DIBROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2-DIBROMOETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1-CHLOROHEXANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-16
**Lab ID:** 1603346-6
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 12:00
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| ETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| M+P-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| O-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| STYRENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| BROMOFORM | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| ISOPROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2,3-TRICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| BROMOBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| N-PROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 2-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 4-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| TERT-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| SEC-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,3-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| P-ISOPROPYLTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,4-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| N-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 2 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2,4-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| HEXACHLOROBUTADIENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| NAPHTHALENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| 1,2,3-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 15:37 |
| *Surr: DIBROMOFLUOROMETHANE* | *100* | | *84-118* | *%REC* | 1 | 3/30/2016 15:37 |
| *Surr: TOLUENE-D8* | *101* | | *85-115* | *%REC* | 1 | 3/30/2016 15:37 |
| *Surr: 4-BROMOFLUOROBENZENE* | *103* | | *85-115* | *%REC* | 1 | 3/30/2016 15:37 |
| GASOLINE RANGE ORGANICS | ND | | 100 | UG/L | 1 | 3/30/2016 15:37 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-17
**Lab ID:** 1603346-7
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 11:45
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | | **SW8260_25** | | Prep Date: **3/30/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| VINYL CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| BROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| TRICHLOROFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| **ACETONE** | **6.2** | JB | **10** | **UG/L** | 1 | 3/30/2016 19:08 |
| IODOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CARBON DISULFIDE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| METHYLENE CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| TRANS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| METHYL TERTIARY BUTYL ETHER | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| VINYL ACETATE | ND | | 2 | UG/L | 1 | 3/30/2016 19:08 |
| CIS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 2-BUTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 19:08 |
| BROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CHLOROFORM | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1,1-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 2,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CARBON TETRACHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| **BENZENE** | **0.58** | J | **1** | **UG/L** | 1 | 3/30/2016 19:08 |
| TRICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| DIBROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| BROMODICHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CIS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 4-METHYL-2-PENTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 19:08 |
| TOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1,2-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 2-HEXANONE | ND | | 10 | UG/L | 1 | 3/30/2016 19:08 |
| TETRACHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,3-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| DIBROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2-DIBROMOETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1-CHLOROHEXANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| CHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| ETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| **M+P-XYLENE** | **0.38** | J | **1** | **UG/L** | 1 | 3/30/2016 19:08 |
| O-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |

**Client:** Braun Intertec
**Project:** B1601155 DOWL Engineering 1804
**Sample ID:** SB-17
**Legal Location:**
**Collection Date:** 3/17/2016 11:45

**Date:** *31-Mar-16*
**Work Order:** 1603346
**Lab ID:** 1603346-7
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| STYRENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| BROMOFORM | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| ISOPROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2,3-TRICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| BROMOBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| N-PROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 2-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 4-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| TERT-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| **1,2,4-TRIMETHYLBENZENE** | **0.32** | J | **1** | **UG/L** | 1 | 3/30/2016 19:08 |
| SEC-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,3-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| P-ISOPROPYLTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,4-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| N-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 2 | UG/L | 1 | 3/30/2016 19:08 |
| 1,2,4-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| HEXACHLOROBUTADIENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| **NAPHTHALENE** | **1.5** | | **1** | **UG/L** | 1 | 3/30/2016 19:08 |
| 1,2,3-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 19:08 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 1 | 3/30/2016 19:08 |
| *Surr: TOLUENE-D8* | *102* | | *85-115* | *%REC* | 1 | 3/30/2016 19:08 |
| *Surr: 4-BROMOFLUOROBENZENE* | *99* | | *85-115* | *%REC* | 1 | 3/30/2016 19:08 |
| GASOLINE RANGE ORGANICS | ND | | 100 | UG/L | 1 | 3/30/2016 19:08 |

**Client:** Braun Intertec
**Project:** B1601155 DOWL Engineering 1804
**Sample ID:** SB-18
**Legal Location:**
**Collection Date:** 3/17/2016 11:20

**Date:** *31-Mar-16*
**Work Order:** 1603346
**Lab ID:** 1603346-8
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | | Prep Date: **3/22/2016** | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **78** | LD | **1.3** | **MG/L** | 1 | 3/25/2016 16:23 |
| **MOTOR OIL RANGE ORGANICS** | **12** | M | **1.3** | **MG/L** | 1 | 3/25/2016 16:23 |
| *Surr: O-TERPHENYL* | *94* | | *63-126* | *%REC* | 1 | 3/25/2016 16:23 |
| **GC/MS Volatiles** | | | **SW8260_25** | | Prep Date: **3/30/2016** | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| CHLOROMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| VINYL CHLORIDE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| BROMOMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| CHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| TRICHLOROFLUOROMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1-DICHLOROETHENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **ACETONE** | **380** | JB | **400** | **UG/L** | 40 | 3/30/2016 16:41 |
| IODOMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| CARBON DISULFIDE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| METHYLENE CHLORIDE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| TRANS-1,2-DICHLOROETHENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| METHYL TERTIARY BUTYL ETHER | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1-DICHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| VINYL ACETATE | ND | | 80 | UG/L | 40 | 3/30/2016 16:41 |
| CIS-1,2-DICHLOROETHENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 2-BUTANONE | ND | | 400 | UG/L | 40 | 3/30/2016 16:41 |
| BROMOCHLOROMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| CHLOROFORM | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1,1-TRICHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 2,2-DICHLOROPROPANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| CARBON TETRACHLORIDE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1-DICHLOROPROPENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,2-DICHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **BENZENE** | **650** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| TRICHLOROETHENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,2-DICHLOROPROPANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| DIBROMOMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| BROMODICHLOROMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| CIS-1,3-DICHLOROPROPENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 4-METHYL-2-PENTANONE | ND | | 400 | UG/L | 40 | 3/30/2016 16:41 |
| TOLUENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1,2-TRICHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 2-HEXANONE | ND | | 400 | UG/L | 40 | 3/30/2016 16:41 |
| TETRACHLOROETHENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,3-DICHLOROPROPANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| DIBROMOCHLOROMETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,2-DIBROMOETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1-CHLOROHEXANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |

**Client:** Braun Intertec
**Project:** B1601155 DOWL Engineering 1804
**Sample ID:** SB-18
**Legal Location:**
**Collection Date:** 3/17/2016 11:20

**Date:** *31-Mar-16*
**Work Order:** 1603346
**Lab ID:** 1603346-8
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **ETHYLBENZENE** | **1300** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| **M+P-XYLENE** | **3000** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| **O-XYLENE** | **63** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| STYRENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| BROMOFORM | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **ISOPROPYLBENZENE** | **95** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 1,2,3-TRICHLOROPROPANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| BROMOBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **N-PROPYLBENZENE** | **250** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 2-CHLOROTOLUENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **1,3,5-TRIMETHYLBENZENE** | **270** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 4-CHLOROTOLUENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| TERT-BUTYLBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **1,2,4-TRIMETHYLBENZENE** | **1200** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| **SEC-BUTYLBENZENE** | **37** | J | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 1,3-DICHLOROBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **P-ISOPROPYLTOLUENE** | **31** | J | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 1,4-DICHLOROBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **N-BUTYLBENZENE** | **64** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 1,2-DICHLOROBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 80 | UG/L | 40 | 3/30/2016 16:41 |
| 1,2,4-TRICHLOROBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| HEXACHLOROBUTADIENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| **NAPHTHALENE** | **830** | | **40** | **UG/L** | 40 | 3/30/2016 16:41 |
| 1,2,3-TRICHLOROBENZENE | ND | | 40 | UG/L | 40 | 3/30/2016 16:41 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 40 | 3/30/2016 16:41 |
| *Surr: TOLUENE-D8* | *102* | | *85-115* | *%REC* | 40 | 3/30/2016 16:41 |
| *Surr: 4-BROMOFLUOROBENZENE* | *98* | | *85-115* | *%REC* | 40 | 3/30/2016 16:41 |
| **GASOLINE RANGE ORGANICS** | **28000** | | **4000** | **UG/L** | 40 | 3/30/2016 16:41 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-19
**Lab ID:** 1603346-9
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 11:00
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel Range Organics** | | | **SW8015M_MO** | | Prep Date: **3/22/2016** | PrepBy: **ACK** |
| **DIESEL RANGE ORGANICS** | **6.6** | LD | **1.3** | **MG/L** | 1 | 3/25/2016 16:54 |
| **MOTOR OIL RANGE ORGANICS** | **1.4** | M | **1.3** | **MG/L** | 1 | 3/25/2016 16:54 |
| *Surr: O-TERPHENYL* | *91* | | *63-126* | *%REC* | 1 | 3/25/2016 16:54 |
| **GC/MS Volatiles** | | | **SW8260_25** | | Prep Date: **3/30/2016** | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| CHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| VINYL CHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| BROMOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| CHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| TRICHLOROFLUOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| ACETONE | ND | | 1000 | UG/L | 100 | 3/30/2016 18:47 |
| IODOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| CARBON DISULFIDE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| METHYLENE CHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| TRANS-1,2-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| METHYL TERTIARY BUTYL ETHER | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1-DICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| VINYL ACETATE | ND | | 200 | UG/L | 100 | 3/30/2016 18:47 |
| CIS-1,2-DICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 2-BUTANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 18:47 |
| BROMOCHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| CHLOROFORM | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1,1-TRICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 2,2-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| CARBON TETRACHLORIDE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,2-DICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **BENZENE** | **4600** | | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| TRICHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,2-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| DIBROMOMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| BROMODICHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| CIS-1,3-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 4-METHYL-2-PENTANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 18:47 |
| TOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1,2-TRICHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 2-HEXANONE | ND | | 1000 | UG/L | 100 | 3/30/2016 18:47 |
| TETRACHLOROETHENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,3-DICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| DIBROMOCHLOROMETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,2-DIBROMOETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1-CHLOROHEXANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** SB-19
**Lab ID:** 1603346-9
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016 11:00
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| CHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **ETHYLBENZENE** | **780** | | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| **M+P-XYLENE** | **1900** | | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| **O-XYLENE** | **46** | J | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| STYRENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| BROMOFORM | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **ISOPROPYLBENZENE** | **46** | J | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| 1,2,3-TRICHLOROPROPANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| BROMOBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **N-PROPYLBENZENE** | **90** | J | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| 2-CHLOROTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **1,3,5-TRIMETHYLBENZENE** | **140** | | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| 4-CHLOROTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| TERT-BUTYLBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **1,2,4-TRIMETHYLBENZENE** | **660** | | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| SEC-BUTYLBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,3-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| P-ISOPROPYLTOLUENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,4-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **N-BUTYLBENZENE** | **34** | J | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| 1,2-DICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 200 | UG/L | 100 | 3/30/2016 18:47 |
| 1,2,4-TRICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| HEXACHLOROBUTADIENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| **NAPHTHALENE** | **590** | | **100** | **UG/L** | 100 | 3/30/2016 18:47 |
| 1,2,3-TRICHLOROBENZENE | ND | | 100 | UG/L | 100 | 3/30/2016 18:47 |
| *Surr: DIBROMOFLUOROMETHANE* | *98* | | *84-118* | *%REC* | 100 | 3/30/2016 18:47 |
| *Surr: TOLUENE-D8* | *101* | | *85-115* | *%REC* | 100 | 3/30/2016 18:47 |
| *Surr: 4-BROMOFLUOROBENZENE* | *100* | | *85-115* | *%REC* | 100 | 3/30/2016 18:47 |
| **GASOLINE RANGE ORGANICS** | **22000** | | **10000** | **UG/L** | 100 | 3/30/2016 18:47 |

**Client:** Braun Intertec
**Date:** *31-Mar-16*
**Project:** B1601155 DOWL Engineering 1804
**Work Order:** 1603346
**Sample ID:** Trip Blank
**Lab ID:** 1603346-10
**Legal Location:**
**Matrix:** WATER
**Collection Date:** 3/17/2016
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | | **SW8260_25** | | Prep Date: **3/30/2016** | | PrepBy: **JXK** |
| DICHLORODIFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| VINYL CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| BROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| TRICHLOROFLUOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| ACETONE | ND | | 10 | UG/L | 1 | 3/30/2016 14:55 |
| IODOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CARBON DISULFIDE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| METHYLENE CHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| TRANS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| METHYL TERTIARY BUTYL ETHER | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| VINYL ACETATE | ND | | 2 | UG/L | 1 | 3/30/2016 14:55 |
| CIS-1,2-DICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 2-BUTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 14:55 |
| BROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CHLOROFORM | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1,1-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 2,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CARBON TETRACHLORIDE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2-DICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| BENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| TRICHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| DIBROMOMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| BROMODICHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CIS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 4-METHYL-2-PENTANONE | ND | | 10 | UG/L | 1 | 3/30/2016 14:55 |
| TOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| TRANS-1,3-DICHLOROPROPENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1,2-TRICHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 2-HEXANONE | ND | | 10 | UG/L | 1 | 3/30/2016 14:55 |
| TETRACHLOROETHENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,3-DICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| DIBROMOCHLOROMETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2-DIBROMOETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1-CHLOROHEXANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| CHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1,1,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| ETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| M+P-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| O-XYLENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |

**Client:** Braun Intertec
**Project:** B1601155 DOWL Engineering 1804
**Sample ID:** Trip Blank
**Legal Location:**
**Collection Date:** 3/17/2016

**Date:** *31-Mar-16*
**Work Order:** 1603346
**Lab ID:** 1603346-10
**Matrix:** WATER
**Percent Moisture:**

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|
| STYRENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| BROMOFORM | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| ISOPROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2,3-TRICHLOROPROPANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,1,2,2-TETRACHLOROETHANE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| BROMOBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| N-PROPYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 2-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,3,5-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 4-CHLOROTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| TERT-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2,4-TRIMETHYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| SEC-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,3-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| P-ISOPROPYLTOLUENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,4-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| N-BUTYLBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2-DICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | | 2 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2,4-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| HEXACHLOROBUTADIENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| NAPHTHALENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| 1,2,3-TRICHLOROBENZENE | ND | | 1 | UG/L | 1 | 3/30/2016 14:55 |
| *Surr: DIBROMOFLUOROMETHANE* | *99* | | *84-118* | *%REC* | 1 | 3/30/2016 14:55 |
| *Surr: TOLUENE-D8* | *101* | | *85-115* | *%REC* | 1 | 3/30/2016 14:55 |
| *Surr: 4-BROMOFLUOROBENZENE* | *103* | | *85-115* | *%REC* | 1 | 3/30/2016 14:55 |
| GASOLINE RANGE ORGANICS | ND | | 100 | UG/L | 1 | 3/30/2016 14:55 |

| | | | |
|---|---|---|---|
| **Client:** | Braun Intertec | **Date:** | *31-Mar-16* |
| **Project:** | B1601155 DOWL Engineering 1804 | **Work Order:** | 1603346 |
| **Sample ID:** | Trip Blank | **Lab ID:** | 1603346-10 |
| **Legal Location:** | | **Matrix:** | WATER |
| **Collection Date:** | 3/17/2016 | **Percent Moisture:** | |

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|

## Explanation of Qualifiers

**Radiochemistry:**

U or ND - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit
M - Requested MDC not met.
LT - Result is less than requested MDC but greater than achieved MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits
NC - Not Calculated for duplicate results less than 5 times MDC
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

**Inorganics:**

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
U or ND - Indicates that the compound was analyzed for but not detected.
E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
M - Duplicate injection precision was not met.
N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
* - Duplicate analysis (relative percent difference) not within control limits.
S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

**Organics:**

U or ND - Indicates that the compound was analyzed for but not detected.
B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
E - Analyte concentration exceeds the upper level of the calibration range.
J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
A - A tentatively identified compound is a suspected aldol-condensation product.
X - The analyte was diluted below an accurate quantitation level.
* - The spike recovery is equal to or outside the control criteria used.
+ - The relative percent difference (RPD) equals or exceeds the control criteria.
G - A pattern resembling gasoline was detected in this sample.
D - A pattern resembling diesel was detected in this sample.
M - A pattern resembling motor oil was detected in this sample.
C - A pattern resembling crude oil was detected in this sample.
4 - A pattern resembling JP-4 was detected in this sample.
5 - A pattern resembling JP-5 was detected in this sample.
H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

**Client:** Braun Intertec

**Work Order:** 1603346

**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **EX160322-2-1** Instrument ID **FUELS-1** Method: **SW8015M_MO**

**DUP** Sample ID: **1603346-3** Units: **MG/L** Analysis Date: **3/25/2016 17:55**

Client ID: **SB-13** Run ID: **HC160325-7A** Prep Date: **3/22/2016** DF: **40**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | 865 | 53.1 | | | | | | 2800 | | 20 | LD |
| MOTOR OIL RANGE ORGANICS | 88 | 53.1 | | | | | | 260 | | 20 | M |
| Surr: O-TERPHENYL | | | 1.84 | | | 63-126 | | | | | X |

**LCS** Sample ID: **EX160322-2** Units: **MG/L** Analysis Date: **3/25/2016 19:28**

Client ID: Run ID: **HC160325-7A** Prep Date: **3/22/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | 19.5 | 0.678 | 18.8 | | 103 | 36-150 | | | | 20 | |
| Surr: O-TERPHENYL | 0.843 | | 0.941 | | 90 | 63-126 | | | | | |

**LCSD** Sample ID: **EX160322-2** Units: **MG/L** Analysis Date: **3/25/2016 19:59**

Client ID: Run ID: **HC160325-7A** Prep Date: **3/22/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | 16.9 | 0.61 | 16.9 | | 99 | 36-150 | | 19.5 | 14 | 20 | |
| Surr: O-TERPHENYL | 0.716 | | 0.847 | | 85 | 63-126 | | | 16 | | |

**MB** Sample ID: **EX160322-2** Units: **MG/L** Analysis Date: **3/25/2016 21:01**

Client ID: Run ID: **HC160325-7A** Prep Date: **3/22/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL RANGE ORGANICS | ND | 0.64 | | | | | | | | | |
| MOTOR OIL RANGE ORGANICS | ND | 0.64 | | | | | | | | | |
| Surr: O-TERPHENYL | 0.8 | | 0.893 | | 90 | 63-126 | | | | | |

**The following samples were analyzed in this batch:**

| | | |
|---|---|---|
| 1603346-2 | 1603346-3 | 1603346-4 |
| 1603346-5 | 1603346-6 | 1603346-8 |
| 1603346-9 | | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-3** Instrument ID **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 09:14**

Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 9.25 | 1 | 10 | | 92 | 63-125 | | | | 20 | |
| CHLOROMETHANE | 9.38 | 1 | 10 | | 94 | 73-122 | | | | 20 | |
| VINYL CHLORIDE | 9.95 | 1 | 10 | | 99 | 72-123 | | | | 20 | |
| BROMOMETHANE | 9.59 | 1 | 10 | | 96 | 68-123 | | | | 20 | |
| CHLOROETHANE | 10.3 | 1 | 10 | | 103 | 74-124 | | | | 20 | |
| TRICHLOROFLUOROMETHANE | 10 | 1 | 10 | | 100 | 74-124 | | | | 20 | |
| 1,1-DICHLOROETHENE | 10.4 | 1 | 10 | | 104 | 77-119 | | | | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 10.1 | 1 | 10 | | 101 | 79-122 | | | | 20 | |
| ACETONE | 47.4 | 10 | 40 | | 118 | 62-142 | | | | 30 | |
| IODOMETHANE | 9.7 | 1 | 10 | | 97 | 72-126 | | | | 20 | |
| CARBON DISULFIDE | 10.7 | 1 | 10 | | 107 | 76-121 | | | | 20 | |
| METHYLENE CHLORIDE | 9.33 | 1 | 10 | | 93 | 71-130 | | | | 20 | |
| TRANS-1,2-DICHLOROETHENE | 10.6 | 1 | 10 | | 106 | 82-117 | | | | 20 | |
| METHYL TERTIARY BUTYL ETHER | 20.7 | 1 | 20 | | 104 | 77-119 | | | | 20 | |
| 1,1-DICHLOROETHANE | 10.6 | 1 | 10 | | 106 | 83-119 | | | | 20 | |
| VINYL ACETATE | 11.4 | 2 | 10 | | 114 | 76-121 | | | | 20 | |
| CIS-1,2-DICHLOROETHENE | 10.6 | 1 | 10 | | 106 | 83-117 | | | | 20 | |
| 2-BUTANONE | 36.2 | 10 | 40 | | 91 | 70-135 | | | | 30 | |
| BROMOCHLOROMETHANE | 10.7 | 1 | 10 | | 107 | 84-129 | | | | 20 | |
| CHLOROFORM | 10.5 | 1 | 10 | | 105 | 82-119 | | | | 20 | |
| 1,1,1-TRICHLOROETHANE | 10.5 | 1 | 10 | | 105 | 80-120 | | | | 20 | |
| 2,2-DICHLOROPROPANE | 12.2 | 1 | 10 | | 122 | 82-140 | | | | 20 | |
| CARBON TETRACHLORIDE | 10.9 | 1 | 10 | | 109 | 77-122 | | | | 20 | |
| 1,1-DICHLOROPROPENE | 10.4 | 1 | 10 | | 104 | 84-118 | | | | 20 | |
| 1,2-DICHLOROETHANE | 10.1 | 1 | 10 | | 101 | 74-128 | | | | 20 | |
| BENZENE | 10.4 | 1 | 10 | | 104 | 83-117 | | | | 20 | |
| TRICHLOROETHENE | 10.7 | 1 | 10 | | 107 | 83-117 | | | | 20 | |
| 1,2-DICHLOROPROPANE | 10.6 | 1 | 10 | | 106 | 84-120 | | | | 20 | |
| DIBROMOMETHANE | 10.3 | 1 | 10 | | 103 | 79-122 | | | | 20 | |
| BROMODICHLOROMETHANE | 10.5 | 1 | 10 | | 105 | 76-122 | | | | 20 | |
| CIS-1,3-DICHLOROPROPENE | 10.6 | 1 | 10 | | 106 | 87-126 | | | | 20 | |
| 4-METHYL-2-PENTANONE | 39.6 | 10 | 40 | | 99 | 73-125 | | | | 30 | |
| TOLUENE | 9.97 | 1 | 10 | | 100 | 82-113 | | | | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 10.7 | 1 | 10 | | 107 | 81-114 | | | | 20 | |
| 1,1,2-TRICHLOROETHANE | 10.3 | 1 | 10 | | 103 | 78-116 | | | | 20 | |
| 2-HEXANONE | 39.8 | 10 | 40 | | 100 | 71-124 | | | | 30 | |
| TETRACHLOROETHENE | 11 | 1 | 10 | | 110 | 84-117 | | | | 20 | |
| 1,3-DICHLOROPROPANE | 10.1 | 1 | 10 | | 101 | 80-115 | | | | 20 | |
| DIBROMOCHLOROMETHANE | 11.1 | 1 | 10 | | 111 | 82-118 | | | | 20 | |
| 1,2-DIBROMOETHANE | 10.8 | 1 | 10 | | 108 | 79-114 | | | | 20 | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-3** Instrument ID **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 09:14**

Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 10.4 | 1 | 10 | | 104 | 80-117 | | | | 20 | |
| CHLOROBENZENE | 10.6 | 1 | 10 | | 106 | 81-113 | | | | 20 | |
| 1,1,1,2-TETRACHLOROETHANE | 10.6 | 1 | 10 | | 106 | 78-113 | | | | 20 | |
| ETHYLBENZENE | 10.6 | 1 | 10 | | 106 | 81-113 | | | | 20 | |
| M+P-XYLENE | 20.3 | 1 | 20 | | 101 | 82-115 | | | | 20 | |
| O-XYLENE | 10.5 | 1 | 10 | | 105 | 81-115 | | | | 20 | |
| STYRENE | 10.9 | 1 | 10 | | 109 | 78-118 | | | | 20 | |
| BROMOFORM | 10.6 | 1 | 10 | | 106 | 70-120 | | | | 20 | |
| ISOPROPYLBENZENE | 10.8 | 1 | 10 | | 108 | 80-113 | | | | 20 | |
| 1,2,3-TRICHLOROPROPANE | 9.94 | 1 | 10 | | 99 | 78-117 | | | | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 10 | 1 | 10 | | 100 | 75-121 | | | | 20 | |
| BROMOBENZENE | 10.2 | 1 | 10 | | 102 | 81-114 | | | | 20 | |
| N-PROPYLBENZENE | 10.5 | 1 | 10 | | 105 | 79-116 | | | | 20 | |
| 2-CHLOROTOLUENE | 10.6 | 1 | 10 | | 106 | 79-116 | | | | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 10.4 | 1 | 10 | | 104 | 78-116 | | | | 20 | |
| 4-CHLOROTOLUENE | 10.5 | 1 | 10 | | 105 | 78-115 | | | | 20 | |
| TERT-BUTYLBENZENE | 10.5 | 1 | 10 | | 105 | 76-120 | | | | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 10.2 | 1 | 10 | | 102 | 80-117 | | | | 20 | |
| SEC-BUTYLBENZENE | 10.6 | 1 | 10 | | 106 | 78-115 | | | | 20 | |
| 1,3-DICHLOROBENZENE | 10.4 | 1 | 10 | | 104 | 79-115 | | | | 20 | |
| P-ISOPROPYLTOLUENE | 11 | 1 | 10 | | 110 | 77-116 | | | | 20 | |
| 1,4-DICHLOROBENZENE | 10.4 | 1 | 10 | | 104 | 82-114 | | | | 20 | |
| N-BUTYLBENZENE | 11.1 | 1 | 10 | | 111 | 79-117 | | | | 20 | |
| 1,2-DICHLOROBENZENE | 10.5 | 1 | 10 | | 105 | 82-114 | | | | 20 | |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.4 | 2 | 10 | | 104 | 73-125 | | | | 20 | |
| 1,2,4-TRICHLOROBENZENE | 9.84 | 1 | 10 | | 98 | 75-120 | | | | 20 | |
| HEXACHLOROBUTADIENE | 12.3 | 1 | 10 | | 123 | 71-124 | | | | 20 | |
| NAPHTHALENE | 9.36 | 1 | 10 | | 94 | 71-131 | | | | 20 | |
| 1,2,3-TRICHLOROBENZENE | 9.98 | 1 | 10 | | 100 | 70-131 | | | | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 25.1 | | 25 | | 100 | 84-118 | | | | | |
| Surr: TOLUENE-D8 | 25 | | 25 | | 100 | 85-115 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 24.3 | | 25 | | 97 | 85-115 | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-3** Instrument ID **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 09:35**

Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | 9.03 | 1 | 10 | | 90 | 63-125 | | 9.25 | 2 | 20 | |
| CHLOROMETHANE | 9.01 | 1 | 10 | | 90 | 73-122 | | 9.38 | 4 | 20 | |
| VINYL CHLORIDE | 9.58 | 1 | 10 | | 96 | 72-123 | | 9.95 | 4 | 20 | |
| BROMOMETHANE | 9.11 | 1 | 10 | | 91 | 68-123 | | 9.59 | 5 | 20 | |
| CHLOROETHANE | 11.3 | 1 | 10 | | 113 | 74-124 | | 10.3 | 9 | 20 | |
| TRICHLOROFLUOROMETHANE | 9.81 | 1 | 10 | | 98 | 74-124 | | 10 | 2 | 20 | |
| 1,1-DICHLOROETHENE | 10.2 | 1 | 10 | | 102 | 77-119 | | 10.4 | 2 | 20 | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 9.71 | 1 | 10 | | 97 | 79-122 | | 10.1 | 4 | 20 | |
| ACETONE | 48.9 | 10 | 40 | | 122 | 62-142 | | 47.4 | 3 | 30 | |
| IODOMETHANE | 9.7 | 1 | 10 | | 97 | 72-126 | | 9.7 | 0 | 20 | |
| CARBON DISULFIDE | 10.3 | 1 | 10 | | 103 | 76-121 | | 10.7 | 4 | 20 | |
| METHYLENE CHLORIDE | 9.05 | 1 | 10 | | 91 | 71-130 | | 9.33 | 3 | 20 | |
| TRANS-1,2-DICHLOROETHENE | 10.5 | 1 | 10 | | 105 | 82-117 | | 10.6 | 1 | 20 | |
| METHYL TERTIARY BUTYL ETHER | 20.8 | 1 | 20 | | 104 | 77-119 | | 20.7 | 0 | 20 | |
| 1,1-DICHLOROETHANE | 10.5 | 1 | 10 | | 105 | 83-119 | | 10.6 | 1 | 20 | |
| VINYL ACETATE | 10.9 | 2 | 10 | | 109 | 76-121 | | 11.4 | 4 | 20 | |
| CIS-1,2-DICHLOROETHENE | 10.4 | 1 | 10 | | 104 | 83-117 | | 10.6 | 2 | 20 | |
| 2-BUTANONE | 37.5 | 10 | 40 | | 94 | 70-135 | | 36.2 | 3 | 30 | |
| BROMOCHLOROMETHANE | 10.6 | 1 | 10 | | 106 | 84-129 | | 10.7 | 1 | 20 | |
| CHLOROFORM | 10.3 | 1 | 10 | | 103 | 82-119 | | 10.5 | 2 | 20 | |
| 1,1,1-TRICHLOROETHANE | 10.1 | 1 | 10 | | 101 | 80-120 | | 10.5 | 4 | 20 | |
| 2,2-DICHLOROPROPANE | 11.6 | 1 | 10 | | 116 | 82-140 | | 12.2 | 5 | 20 | |
| CARBON TETRACHLORIDE | 10.6 | 1 | 10 | | 106 | 77-122 | | 10.9 | 3 | 20 | |
| 1,1-DICHLOROPROPENE | 10.4 | 1 | 10 | | 104 | 84-118 | | 10.4 | 0 | 20 | |
| 1,2-DICHLOROETHANE | 10.1 | 1 | 10 | | 101 | 74-128 | | 10.1 | 0 | 20 | |
| BENZENE | 10.3 | 1 | 10 | | 103 | 83-117 | | 10.4 | 1 | 20 | |
| TRICHLOROETHENE | 10.3 | 1 | 10 | | 103 | 83-117 | | 10.7 | 3 | 20 | |
| 1,2-DICHLOROPROPANE | 10.6 | 1 | 10 | | 106 | 84-120 | | 10.6 | 0 | 20 | |
| DIBROMOMETHANE | 10.5 | 1 | 10 | | 105 | 79-122 | | 10.3 | 1 | 20 | |
| BROMODICHLOROMETHANE | 10.5 | 1 | 10 | | 105 | 76-122 | | 10.5 | 0 | 20 | |
| CIS-1,3-DICHLOROPROPENE | 10.6 | 1 | 10 | | 106 | 87-126 | | 10.6 | 1 | 20 | |
| 4-METHYL-2-PENTANONE | 40.2 | 10 | 40 | | 100 | 73-125 | | 39.6 | 1 | 30 | |
| TOLUENE | 10 | 1 | 10 | | 100 | 82-113 | | 9.97 | 0 | 20 | |
| TRANS-1,3-DICHLOROPROPENE | 11.1 | 1 | 10 | | 111 | 81-114 | | 10.7 | 3 | 20 | |
| 1,1,2-TRICHLOROETHANE | 10.5 | 1 | 10 | | 105 | 78-116 | | 10.3 | 2 | 20 | |
| 2-HEXANONE | 41.3 | 10 | 40 | | 103 | 71-124 | | 39.8 | 4 | 30 | |
| TETRACHLOROETHENE | 11 | 1 | 10 | | 110 | 84-117 | | 11 | 0 | 20 | |
| 1,3-DICHLOROPROPANE | 10.4 | 1 | 10 | | 104 | 80-115 | | 10.1 | 3 | 20 | |
| DIBROMOCHLOROMETHANE | 11.2 | 1 | 10 | | 112 | 82-118 | | 11.1 | 1 | 20 | |
| 1,2-DIBROMOETHANE | 10.9 | 1 | 10 | | 109 | 79-114 | | 10.8 | 1 | 20 | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-3** Instrument ID **HPV1** Method: **SW8260_25**

**LCSD** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 09:35**

Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | 10.3 | 1 | 10 | | 103 | 80-117 | | 10.4 | 1 | 20 | |
| CHLOROBENZENE | 10.7 | 1 | 10 | | 107 | 81-113 | | 10.6 | 0 | 20 | |
| 1,1,1,2-TETRACHLOROETHANE | 10.7 | 1 | 10 | | 107 | 78-113 | | 10.6 | 1 | 20 | |
| ETHYLBENZENE | 10.5 | 1 | 10 | | 105 | 81-113 | | 10.6 | 1 | 20 | |
| M+P-XYLENE | 20.3 | 1 | 20 | | 101 | 82-115 | | 20.3 | 0 | 20 | |
| O-XYLENE | 10.4 | 1 | 10 | | 104 | 81-115 | | 10.5 | 1 | 20 | |
| STYRENE | 11 | 1 | 10 | | 110 | 78-118 | | 10.9 | 0 | 20 | |
| BROMOFORM | 10.9 | 1 | 10 | | 109 | 70-120 | | 10.6 | 4 | 20 | |
| ISOPROPYLBENZENE | 10.8 | 1 | 10 | | 108 | 80-113 | | 10.8 | 0 | 20 | |
| 1,2,3-TRICHLOROPROPANE | 10.1 | 1 | 10 | | 101 | 78-117 | | 9.94 | 1 | 20 | |
| 1,1,2,2-TETRACHLOROETHANE | 10.1 | 1 | 10 | | 101 | 75-121 | | 10 | 1 | 20 | |
| BROMOBENZENE | 10.2 | 1 | 10 | | 102 | 81-114 | | 10.2 | 1 | 20 | |
| N-PROPYLBENZENE | 10.2 | 1 | 10 | | 102 | 79-116 | | 10.5 | 3 | 20 | |
| 2-CHLOROTOLUENE | 10.4 | 1 | 10 | | 104 | 79-116 | | 10.6 | 1 | 20 | |
| 1,3,5-TRIMETHYLBENZENE | 10.3 | 1 | 10 | | 103 | 78-116 | | 10.4 | 1 | 20 | |
| 4-CHLOROTOLUENE | 10.6 | 1 | 10 | | 106 | 78-115 | | 10.5 | 1 | 20 | |
| TERT-BUTYLBENZENE | 10.4 | 1 | 10 | | 104 | 76-120 | | 10.5 | 1 | 20 | |
| 1,2,4-TRIMETHYLBENZENE | 10.1 | 1 | 10 | | 101 | 80-117 | | 10.2 | 1 | 20 | |
| SEC-BUTYLBENZENE | 10.3 | 1 | 10 | | 103 | 78-115 | | 10.6 | 3 | 20 | |
| 1,3-DICHLOROBENZENE | 10.4 | 1 | 10 | | 104 | 79-115 | | 10.4 | 0 | 20 | |
| P-ISOPROPYLTOLUENE | 10.7 | 1 | 10 | | 107 | 77-116 | | 11 | 2 | 20 | |
| 1,4-DICHLOROBENZENE | 10.5 | 1 | 10 | | 105 | 82-114 | | 10.4 | 1 | 20 | |
| N-BUTYLBENZENE | 10.8 | 1 | 10 | | 108 | 79-117 | | 11.1 | 3 | 20 | |
| 1,2-DICHLOROBENZENE | 10.6 | 1 | 10 | | 106 | 82-114 | | 10.5 | 2 | 20 | |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.3 | 2 | 10 | | 103 | 73-125 | | 10.4 | 1 | 20 | |
| 1,2,4-TRICHLOROBENZENE | 9.95 | 1 | 10 | | 99 | 75-120 | | 9.84 | 1 | 20 | |
| HEXACHLOROBUTADIENE | 11.6 | 1 | 10 | | 116 | 71-124 | | 12.3 | 7 | 20 | |
| NAPHTHALENE | 9.69 | 1 | 10 | | 97 | 71-131 | | 9.36 | 3 | 20 | |
| 1,2,3-TRICHLOROBENZENE | 10.3 | 1 | 10 | | 103 | 70-131 | | 9.98 | 3 | 20 | |
| Surr: DIBROMOFLUOROMETHANE | 25.2 | | 25 | | 101 | 84-118 | | | 0 | | |
| Surr: TOLUENE-D8 | 25.5 | | 25 | | 102 | 85-115 | | | 2 | | |
| Surr: 4-BROMOFLUOROBENZENE | 24.1 | | 25 | | 96 | 85-115 | | | 1 | | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-3** Instrument ID **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 12:06**

Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DICHLORODIFLUOROMETHANE | ND | 1 | | | | | | | | | |
| CHLOROMETHANE | ND | 1 | | | | | | | | | |
| VINYL CHLORIDE | ND | 1 | | | | | | | | | |
| BROMOMETHANE | ND | 1 | | | | | | | | | |
| CHLOROETHANE | ND | 1 | | | | | | | | | |
| TRICHLOROFLUOROMETHANE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | ND | 1 | | | | | | | | | |
| ACETONE | 10 | 10 | | | | | | | | | |
| IODOMETHANE | ND | 1 | | | | | | | | | |
| CARBON DISULFIDE | ND | 1 | | | | | | | | | |
| METHYLENE CHLORIDE | ND | 1 | | | | | | | | | |
| TRANS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| METHYL TERTIARY BUTYL ETHER | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| VINYL ACETATE | ND | 2 | | | | | | | | | |
| CIS-1,2-DICHLOROETHENE | ND | 1 | | | | | | | | | |
| 2-BUTANONE | ND | 10 | | | | | | | | | |
| BROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |
| CHLOROFORM | ND | 1 | | | | | | | | | |
| 1,1,1-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| CARBON TETRACHLORIDE | ND | 1 | | | | | | | | | |
| 1,1-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROETHANE | ND | 1 | | | | | | | | | |
| BENZENE | ND | 1 | | | | | | | | | |
| TRICHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOMETHANE | ND | 1 | | | | | | | | | |
| BROMODICHLOROMETHANE | ND | 1 | | | | | | | | | |
| CIS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 4-METHYL-2-PENTANONE | ND | 10 | | | | | | | | | |
| TOLUENE | ND | 1 | | | | | | | | | |
| TRANS-1,3-DICHLOROPROPENE | ND | 1 | | | | | | | | | |
| 1,1,2-TRICHLOROETHANE | ND | 1 | | | | | | | | | |
| 2-HEXANONE | ND | 10 | | | | | | | | | |
| TETRACHLOROETHENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROPROPANE | ND | 1 | | | | | | | | | |
| DIBROMOCHLOROMETHANE | ND | 1 | | | | | | | | | |
| 1,2-DIBROMOETHANE | ND | 1 | | | | | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-3** Instrument ID **HPV1** Method: **SW8260_25**

**MB** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 12:06**

Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-CHLOROHEXANE | ND | 1 | | | | | | | | | |
| CHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| ETHYLBENZENE | ND | 1 | | | | | | | | | |
| M+P-XYLENE | ND | 1 | | | | | | | | | |
| O-XYLENE | ND | 1 | | | | | | | | | |
| STYRENE | ND | 1 | | | | | | | | | |
| BROMOFORM | ND | 1 | | | | | | | | | |
| ISOPROPYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROPROPANE | ND | 1 | | | | | | | | | |
| 1,1,2,2-TETRACHLOROETHANE | ND | 1 | | | | | | | | | |
| BROMOBENZENE | ND | 1 | | | | | | | | | |
| N-PROPYLBENZENE | ND | 1 | | | | | | | | | |
| 2-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| 1,3,5-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| 4-CHLOROTOLUENE | ND | 1 | | | | | | | | | |
| TERT-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | ND | 1 | | | | | | | | | |
| SEC-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,3-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| P-ISOPROPYLTOLUENE | ND | 1 | | | | | | | | | |
| 1,4-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| N-BUTYLBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DICHLOROBENZENE | ND | 1 | | | | | | | | | |
| 1,2-DIBROMO-3-CHLOROPROPANE | ND | 2 | | | | | | | | | |
| 1,2,4-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| HEXACHLOROBUTADIENE | ND | 1 | | | | | | | | | |
| NAPHTHALENE | ND | 1 | | | | | | | | | |
| 1,2,3-TRICHLOROBENZENE | ND | 1 | | | | | | | | | |
| Surr: DIBROMOFLUOROMETHANE | 24.8 | | 25 | | 99 | 84-118 | | | | | |
| Surr: TOLUENE-D8 | 25.5 | | 25 | | 102 | 85-115 | | | | | |
| Surr: 4-BROMOFLUOROBENZENE | 26 | | 25 | | 104 | 85-115 | | | | | |

**Client:** Braun Intertec
**Work Order:** 1603346
**Project:** B1601155 DOWL Engineering 1804

# QC BATCH REPORT

Batch ID: **VL160330-3-4** Instrument ID **HPV1** Method: **SW8260_25**

**LCS** Sample ID: **VL160330-6** Units: **UG/L** Analysis Date: **3/30/2016 10:41**
Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 1120 | 100 | 1000 | | 112 | 80-120 | | | | 20 | |

**LCSD** Sample ID: **VL160330-6** Units: **UG/L** Analysis Date: **3/30/2016 11:02**
Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | 1080 | 100 | 1000 | | 108 | 80-120 | | 1120 | 3 | 20 | |

**MB** Sample ID: **VL160330-3** Units: **UG/L** Analysis Date: **3/30/2016 12:06**
Client ID: Run ID: **VL160330-3A** Prep Date: **3/30/2016** DF: **1**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GASOLINE RANGE ORGANICS | ND | 100 | | | | | | | | | |

**The following samples were analyzed in this batch:**

| | | |
|---|---|---|
| 1603346-1 | 1603346-2 | 1603346-3 |
| 1603346-4 | 1603346-5 | 1603346-6 |
| 1603346-7 | 1603346-8 | 1603346-9 |
| 1603346-10 | | |

# Appendix D

# Reference

Clayton, Lee, *Geologic Map of North Dakota*, North Dakota Geological Society, 1980.

Hainer, J.L., "The Geology of North Dakota," North Dakota Geology Bulletin Number 31, North Dakota Geological Society, 1956.

*Phase II Environmental Site Assessment: Site Soils Investigation, DOWL Engineering and North Dakota Department of Transportation. Prepared by Broun Intertec. March 7, 2016. Project B1601155.*

*Phase I Environmental Site Assessment, Highway 1804 Site Corridor (NDDOT Project No. 7-804(055)034), from CO RD 42 to Tempt NE TRR, Williston, North Dakota. Prepared by Western Plains Consulting, Inc., March 2016, Project 20891.*