

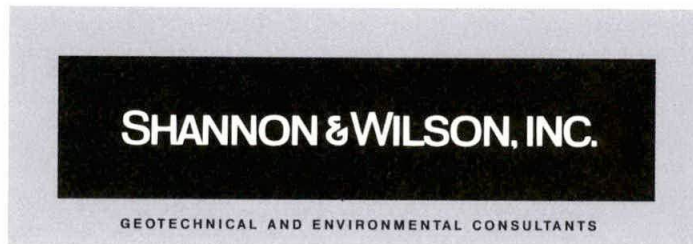
NW 2491
Hilton Seattle Hotel
First Quarter Groundwater Monitoring Report
Seattle, Washington

September 30, 2013

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21-1-12341-004

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**HILTON SEATTLE HOTEL
FIRST QUARTER GROUNDWATER MONITORING REPORT
SEATTLE, WASHINGTON**

1.0 INTRODUCTION

This report summarizes the status of groundwater remediation activities at the Hilton Seattle Hotel in Seattle, Washington (the Site); facility number 56642815. Cleanup of gasoline-contaminated groundwater is being conducted in response to the rescission of No Further Action (NFA) determination by the Washington State Department of Ecology (Ecology). The cleanup action is being conducted on behalf of the former property owner, R.C. Hedreen Company of Seattle, Washington, as part of a real estate transaction agreement with the purchaser, Stonebridge Companies of Englewood, Colorado. Cleanup activities have been performed in general accordance with our Cleanup Action Plan (CAP), dated July 18, 2012. The work has included the installation of a single-phase skimmer pump to recover free-floating petroleum product to the extent practicable from one monitoring well located in the sidewalk right-of-way (ROW) adjacent east of the Site. This report summarizes remediation activities performed since system start up in November 2012 as well as monitoring activities for the period June 2013 to August 2013, considered to be the first quarter of monitoring.

2.0 BACKGROUND

The Site is located at 1301 6th Avenue in downtown Seattle, Washington (Figure 1). The hotel was built over a parking structure in approximately 1970. Two 2,000-gallon gasoline underground storage tanks (USTs) were installed along the eastern property line during construction of the hotel. Approximately two years after installation, it was reported that one of the two USTs developed a leak and was replaced. The two tanks were abandoned in place in 1985 by filling with cement slurry. Although a service station occupied the main level of the parking structure that occupied the site prior to the hotel's construction, no other fuel tanks are known to be present beneath the property.

In the early 1990's, gasoline vapors were encountered in an excavation to extend the hotel's elevator shaft down to the depth of the pedestrian concourse leading toward Rainier Tower. In 1994, Environmental Associates, Inc. drilled a boring adjacent to the abandoned USTs and confirmed the presence of gasoline-related contamination in soil samples from the boring. In 1997 and 1998, Shannon & Wilson conducted site investigations and data evaluations related to closure of the two former USTs beneath the hotel. At the time, no soil contamination was detected in borings advanced at the hotel, but over a foot of gasoline-range petroleum product was observed floating in the up-gradient well MW-5. Gasoline-range hydrocarbons; benzene,

toluene, ethylbenzene, and xylenes (BTEX); and lead were detected in groundwater at down-gradient wells MW-2, MW-3, and MW-4 above Washington Model Toxics Cleanup Act (MTCA) Method A cleanup levels established at the time.

Because groundwater flow was interpreted to be to the west-northwest at a relatively steep gradient and a relatively impermeable layer of clay and silt was observed in borings advanced at the Site, the floating product found up-gradient of the abandoned USTs was attributed to an offsite source. In 1998, Shannon & Wilson also assessed risks and found no complete exposure pathways exist at the Site. Based on the available site information Ecology issued NFA letter in October 1998.

In a periodic review conducted in February 2010, Ecology rescinded the NFA, citing the presence of floating petroleum product in MW-5 as a risk to environmental health. In response to Ecology's concern, an investigation was conducted by Shannon & Wilson in August 2011 to assess current groundwater conditions at the Site. The investigation confirmed the presence approximately 2.3 feet of relatively unweathered petroleum product floating in MW-5 and gasoline-range hydrocarbons, BTEX, and lead in groundwater at down-gradient wells MW-2, MW-3, and MW-4. Vacuum extraction using an eductor truck was attempted as an interim cleanup action on January 24 and February 21, 2012; however, the effort had limited success and resulted in the removal of approximately 3 gallons of free product.

In June 2012, the hotel re-entered Ecology's Voluntary Cleanup Program (VCP) and Shannon & Wilson was retained to implement groundwater cleanup action with the goal of re-obtaining NFA determination from Ecology. The preferred cleanup action included the installation of a single-phase product recovery system in MW-5 to remove source product and in-situ groundwater treatment in MW-2, MW-3, MW-4, and MW-5 using oxygen release compounds to degrade residual contamination in groundwater under the Site. The overall objective is to remove source contamination and achieve cleanup levels through monitored natural attenuation.

3.0 GEOLOGIC AND HYDROGEOLOGIC SETTING

3.1 Regional and Site Geologic Conditions

The Site is situated on the Seattle Drift Plain, a gently rolling, elevated plain which formed approximately 13,500 years ago during the last period of continental glaciations. Geologic maps for the site vicinity suggest that much of the material underlying the subject site has been modified extensively by excavation, filling, and/or construction. The Site is situated on a west-facing slope at approximately 175 above mean sea level. An arbitrary site datum was established with the sidewalk elevation at monitoring well MW-5 at 175.6 feet in elevation. This elevation was estimated using King County iMap.

Based on borings advanced by Shannon & Wilson in 1997, the Site is underlain by fill and then layers of silty sand, clayey silt, and silty fine sand. Below the fill, the soil is generally dense and hard, having been glacially overridden. The fill thickness ranges from approximately 3 to 12 feet beneath the basement and sidewalk at the Site. The fill layer is underlain by a silty sand/sandy silt layer that ranges from 1 to 12 feet thick. The closed USTs are resting on this layer. A hard, silty clay/clayey silt underlies the silty sand layer, ranging from 3 to 15 feet thick. The clayey silt layer was absent in the boring at MW-5 but appears to be continuous beneath the basement and UST area. The clayey silt layer is underlain by a medium to very dense, silty, fine sand layer.

3.2 Groundwater Conditions

Groundwater is present beneath the Site in the lower silty sand layer, below the clayey silt layer. Water level measurements collected at the four monitoring wells indicates that groundwater is at an elevation of approximately 140 feet and flows to the west-northwest. The groundwater level at MW-5 was adjusted to account for the floating product layer, when necessary. Groundwater is approximately 34 feet below ground surface (bgs) at the sidewalk along 6th Avenue and ranges from approximately 15 to 22 feet bgs in the basement garage levels. The flow gradient was calculated to be approximately 0.018 foot/foot in August 2011 and 0.026 foot/foot in January 1998.

4.0 GROUNDWATER REMEDIATION ACTIVITIES

4.1 Conceptual Site Model

Based on measured water levels, MW-5 is up-gradient of the location of the closed USTs, MW-2 is cross-gradient, and MW-3 and MW-4 are down-gradient. Floating product has been observed at MW-5 but not at MW-2, MW-3, or MW-4. Because floating petroleum product was not observed in what are believed to be hydraulically connected down-gradient wells, the product observed in MW-5 appears to be isolated. While the observed dense clayey silt layer is absent at MW-5, an unknown boundary condition exists that prevents the floating product plume from migrating to down-gradient locations. The material underlying the subject site has been extensively modified by excavation, filling, and/or construction and has likely created a local subsurface depression that contains the product plume. This is further supported by the condition of the leaded gasoline petroleum product, which, based on a laboratory chromatogram of a collected sample, was relatively unweathered after being released into the environment over 40 years ago.

Contaminants of concern (COCs) include gasoline-range hydrocarbons, BTEX, and lead. The contamination plume is approximately 34 feet bgs at MW-5, and dissolved groundwater

contamination is approximately 15 to 22 feet bgs. The depth of the contamination below the built environment prevents exposure to contaminated soil and groundwater by human and environmental receptors. Groundwater under downtown Seattle is not likely to be used for drinking water and is not considered a complete exposure pathway. A vapor survey was conducted during our 1998 site evaluation and gasoline vapors were not measured in the hotel's parking garage, suggesting that this exposure pathway is also incomplete.

4.2 Product Recovery System

Under subcontract to Shannon & Wilson, Clearcreek Contractors of Everett, Washington, installed a product recovery system at the Site. The system was installed in general accordance with our CAP and features a pneumatic, single-phase skimmer pump installed in MW-5, with air supply and product extraction tubing routed under the sidewalk ROW to an equipment compound inside the hotel's parking garage. The system was inspected and approved by the Seattle Fire Department and startup was initiated November 6, 2012.

Figure 2 shows the thickness of the floating product and the cumulative gallons removed since startup of the product extraction system. An initial rebound test was conducted from April 11 to April 26, 2013 when the rate of product extraction appeared to level off, after approximately 102 gallons of product had been removed. Approximately 0.6 feet of product was observed at the completion of the rebound test. The extraction pump was readjusted and the system was restarted. A second rebound test was conducted from July 25 to August 14, 2013 when the rate of product extraction again appeared to level off, after an additional 23 gallons of product had been removed. No product was observed at the completion of the second rebound test and the extraction pump was stopped in preparation of follow up groundwater treatment. Approximately 128 total gallons of product have been removed during this and the interim cleanup actions.

4.3 In-Situ Groundwater Treatment

Groundwater treatment using oxygen release compounds (ORC) was initiated on May 28, 2013 at MW-2, MW-3, and MW-4 to enhance biodegradation of contamination in down-gradient portions of the plume as product removal in MW-5 progressed. RegenesiTM ORC Advanced well socks, containing a mixture of calcium oxyhydroxide and calcium hydroxide, were installed in the wells to deliver oxygen as electron donors for the biodegradation of the petroleum compounds.

ORC socks will be installed MW-5 now that source product has been removed to the extent practicable. An oil-absorbent sock will also be deployed in MW-5 to remove any remaining free product from the groundwater surface as treatment continues. In-situ treatment at MW-5 will be initiated September 2013.

5.0 GROUNDWATER MONITORING

5.1 Monitoring Program

Quarterly monitoring is being conducted to document groundwater conditions during cleanup actions at the Hotel. Future monitoring events are scheduled for the months of November, February, May, and August. While up-gradient of the closed USTs, floating product is confined to the vicinity of MW-5 and the well is considered to be within the contamination source. Wells MW-2, MW-3, and MW-4 are considered to be down-gradient of the source, within the contaminated groundwater plume. Groundwater monitoring parameters include the following:

- COCs
 - Gasoline-Range Hydrocarbons
 - BTEX
 - Total Lead
- Primary Geochemical Indicators
 - Dissolved Oxygen
 - Oxidation-Reduction Potential
 - pH
 - Specific Conductance
 - Temperature
- Secondary Geochemical Indicators
 - Ferrous Iron
 - Nitrate
 - Sulfate

First quarter monitoring was performed at monitoring wells MW-2, MW-3, and MW-4. Because the second rebound test was being completed at monitoring well MW-5 during this first quarter, the well was not sampled but will be included in the second quarter monitoring event.

5.2 Groundwater Sampling

On August 22, 2013, groundwater samples were collected from monitoring wells MW-2, MW-3, MW-4 using a low-flow sampling techniques. ORC socks in these wells were removed one month prior to sampling and the groundwater was allowed to equilibrate. Each well was purged at a low flow (less than 500 milliliter per minute) pumping rate prior to sampling using a peristaltic pump. The purge water was monitored using a YSI water quality meter until the measured groundwater quality parameters (pH, conductivity, temperature, etc.) stabilized to ± 5 percent for three consecutive readings taken at three- to five-minute intervals. The purge water was collected in a bucket and transferred to the storage tank at the equipment compound for future disposal.

Following purging, groundwater samples were collected using a high-density polyethylene bailer to limit any potential effects of the peristaltic pump on volatile organic compounds to be tested. The samples were collected in clean, laboratory-supplied containers and placed in a cooler with ice for transport to the laboratory. Purging and sampling data are presented in Table 1.

5.3 Laboratory Analyses

Groundwater samples were submitted under chain-of-custody procedures to Fremont Analytical in Seattle, Washington. The collected samples were analyzed for COCs as well as geochemical indicators for evaluating the potential for natural attenuation. Analyses for COCs included gasoline by Method Northwest Total Petroleum Hydrocarbons-Gasoline, BTEX by Method Environmental Protection Agency (EPA) 8021B, and total lead by Method EPA 6020/200.8. Analyses for geochemical indicators included ferrous iron by Standard Method 3500B and nitrate and sulfate by EPA Method 300.0.

5.4 Monitoring Results

The first quarter groundwater monitoring results for COCs are shown in Table 2. The data are presented along with two historical datasets for comparison, one from our initial site assessment in 1997/1998 and one from our evaluation of groundwater conditions prior to cleanup activities in 2011. Similarly, first quarter results for geochemical indicators are shown in Table 3, with available historical results shown for comparison. The analytical laboratory report for the first quarter results is provided in Appendix A.

5.4.1 Contaminants of Concern

In the first quarter, the sample collected from MW-2 had detected concentrations of gasoline, BTEX, and lead. The gasoline concentration at MW-2 was above its MTCA Method A groundwater cleanup criterion. Gasoline was also detected at MW-3 but below the MTCA cleanup criterion. MW-4 did not have any detections.

Concentrations of gasoline and lead at MW-2 and gasoline at MW-3 increased in the first quarter over historical sample results. All other concentrations have decreased or remained the same, including benzene and ethylbenzene at MW-2, which were above the MTCA cleanup criteria in the previous sampling event in 2011.

Figures 3 and 4 show the estimated extents of gasoline and benzene in groundwater for the three datasets, respectively. The leading edge of groundwater contaminated with gasoline extended past MW-4 in 2011, but has since receded with the first quarter result (Figure 3). The estimated extent of gasoline at concentrations above its MTCA cleanup criterion is relatively

stable in the central portion of the Site. The leading edge of groundwater contaminated with benzene at concentrations above its MTCA cleanup criterion has receded significantly from levels observed in 1997 and 2011 (Figure 4).

5.4.2 Geochemical Indicators

Geochemical indicators are categorized as primary or secondary. Primary indicators were measured in the field during purging using a YSI water quality meter and the secondary indicators were analyzed by the laboratory. Low DO concentrations between (e.g., 0 to 1.0 milligrams per liter [mg/L]), measurable ferrous iron, and depleted nitrate and sulfate concentrations generally suggest that active biodegradation of hydrocarbons is occurring. ORP values are a measure of the reducing conditions present and can be correlated to the presence or absence of secondary geochemical indicators to support the identification of biodegradation processes.

In the first quarter, DO ranged from 0.10 to 0.27 mg/L in the sampled wells. Measurable ferrous iron was observed in all wells, with the greatest concentration at MW-3. Nitrate and sulfate concentrations were low or non-detect, except for sulfate in MW-4. ORP values correlate well with the observed detections. Additionally, elevated groundwater temperatures were observed in all wells. The elevated temperatures are likely attributable to the hotel's underground electrical vault in the immediate vicinity of the monitoring wells and may be beneficial to microbial growth.

5.4.3 Water Level Monitoring

Table 4 presents water level data for the first quarter monitoring event and two previous sampling events. Figure 5 shows approximate groundwater elevation contours for the first quarter data. The measurements show the groundwater flow directions to be in the west-northwest direction, with a calculated groundwater flow gradient of approximately 0.015 foot/foot. The flow gradient was approximately 0.018 foot/foot in August 2011 and 0.026 foot/foot in January 1998.

6.0 INVESTIGATION-DERIVED WASTE

Investigation-derived waste includes recovered petroleum product generated during the cleanup action, purge water from groundwater monitoring, and disposable sampling equipment (nitrile gloves, bailers, etc.). There is approximately 234 gallons of mixed waste (recovered petroleum and purged groundwater) in the storage tank pending disposal. A total of 87 gallons of recovered petroleum has been previously transported to Marine Vacuum Services, Inc. in Seattle,

Washington, on three separate occasions for fuel blending. Disposal documentation is presented in Appendix B.

7.0 CONCLUSIONS

Based on our review of the results presented, we offer the following conclusions regarding remediation at the Site:

- Floating product was not observed at MW-5 after the completion of the second rebound test and the extraction pump was shut off. Floating product was also not observed at MW-2, MW-3, or MW-4.
- Approximately 128 gallons of product have been extracted at MW-5. In-situ groundwater treatment should be initiated in the second quarter. However, MW-5 should be evaluated periodically to ensure that additional free product is not entering the well due to rising water table elevations from rainfall events.
- Down-gradient well MW-2 had detected concentrations of all COCs, with the gasoline concentration exceeding the MTCA Method A cleanup criterion. Gasoline was detected below the cleanup criterion in MW-3, but no other COCs were detected in MW-3 or MW-4. In-situ groundwater treatment should continue at these locations.
- Contamination is not migrating off-site and the leading edge of the contamination plume appears to be shrinking based on the data. This trend is expected to continue with the removal of source product and continued in-situ treatment of the groundwater.
- Geochemical indicators suggest that biodegradation is occurring at the Site. Monitored natural attenuation appears to be a viable long-term remediation approach and should continue to be evaluated as additional monitoring data is collected.

The second quarter groundwater monitoring event is scheduled to be conducted November 2013. These activities will be the subject of the next quarterly groundwater monitoring report.

8.0 LIMITATIONS

The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our agreement. The conclusions presented in this report are professional opinions based on interpretation of information currently available to us and are made within the operational scope, budget, and schedule constraints of this project. No warranty, express or implied, is made.

SHANNON & WILSON, INC.

Shannon & Wilson, Inc. has prepared Appendix C, "Important Information About Your Geotechnical/Environmental Report." While not written specifically for this project, this enclosure should assist you and other in understanding the use and limitations of our reports.

We appreciate the opportunity to be of continued service on this project. If you have any questions, please contact the undersigned at (206) 632-8020.

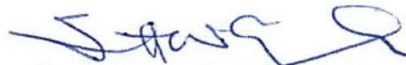
Sincerely,

SHANNON & WILSON, INC.



Michael S. Reynolds
Environmental Engineer

MSR:SWG/msr



Scott W. Gaulke, P.E., L.H.G.
Vice President

9.0 REFERENCES

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TABLE 1
GROUNDWATER SAMPLING LOG

	Monitoring Well			
	MW-2	MW-3	MW-4	MW-5
Water Level Measurement Data				
Date Water Level Measured	8/22/2013	8/22/2013	8/22/2013	--
Time Water Level Measured	14:45	12:25	11:10	--
Measuring Point (MP) Elevation, Feet	162.55	161.24	154.30	175.63
Depth to Water Below MP, Feet	22.20	21.10	15.26	--
Water Level Elevation, Feet	140.35	140.14	139.04	--
Purging/Sampling Data				
Date Sampled	8/22/2013	8/22/2013	8/22/2013	--
Time Sampled	15:10	13:00	12:05	--
Depth to Water Below MP, Feet	22.20	21.10	15.26	--
Total Depth of Well Below MP, Feet	35.00	30.00	20.50	39.50
Water Column in Well, Feet	12.80	8.90	5.24	--
Gallons per Foot	0.16	0.16	0.16	0.16
Gallons in Well	2.05	1.42	0.84	--
Total Gallons Pumped/Bailed	1.5	0.75	1.5	--
Purging Method	Peristaltic	Peristaltic	Peristaltic	--
Sampling Method	Bailer	Bailer	Bailer	--
Diameter of Well Casing	2-inch	2-inch	2-inch	2-inch
Water Quality Data				
Temperature, °C	22.4	21.5	21.5	--
Dissolved Oxygen, mg/L	0.10	0.27	0.10	--
Specific Conductance, µS/cm	0.833	0.739	0.599	--
pH, standard units	8.33	6.37	9.22	--
Oxidation-Reduction Potential, mV	40.8	-99.8	51.3	--
Remarks	No free product observed. Hydrocarbon odor.	No free product observed. Hydrocarbon odor.	No free product observed. Hydrocarbon odor.	Not sampled; rebound test completed.

Notes:

Water quality parameters were measured with YSI instruments.

-- indicates not applicable or not measured

°C = degrees Celsius

mg/L = milligram per liter

µS/cm = microsiemens per centimeter

mV = millivolt

TABLE 2
GROUNDWATER MONITORING RESULTS

Monitoring Well	Sample ID	Sample Date	Sampling Results (µg/L)					
			Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
MW-2	MW2-W-01	9/25/1997	4,700	6,700	210	670	590	8.00
	MW-2-082511	8/25/2011	2,950	76.1	2.19	863	22.0	< 1.0
	MW-2	8/22/2013	5,000	3.07	2.01	408	10.8	8.14
MW-3	MW3-W-01	9/25/1997	700	7,200	10.0	74.0	97.0	9.00
	MW-3-082511	8/25/2011	153	< 1.0	< 1.0	< 1.0	1.35	< 1.0
	MW-3	8/22/2013	209	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
MW-4	MW4-W-01	11/14/1997	< 50	< 1.0	< 1.0	< 1.0	< 3.0	< 4.0
	MW-4-082611	8/26/2011	135	< 1.0	< 1.0	< 1.0	< 2.0	5.57
	MW-4	8/22/2013	< 50	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
MTCA Method A Groundwater Cleanup Levels			800	5	1,000	700	1,000	15

Notes:

Bold indicates analyte detected above method reporting limit.

Shaded cell indicates detection is above the groundwater cleanup criterion.

< = detection below reporting limit shown.

µg/L = micrograms per liter

MTCA = Washington State Model Toxics Control Act

TABLE 3
GEOCHEMICAL INDICATORS

Monitoring Well	Sample ID	Sample Date	Primary Indicators					Secondary Indicators		
			Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	pH	Specific Conductance (µS/cm)	Temperature (°C)	Nitrate (µg/L)	Sulfate (µg/L)	Ferrous Iron (µg/L)
MW-2	MW2-W-01	9/25/1997	--	--	--	--	--	--	--	--
	MW-2-082511	8/25/2011	0.25	-86.0	6.94	0.701	20.5	--	--	--
	MW-2	8/22/2013	0.10	40.8	8.33	0.833	22.4	< 100	970	980
MW-3	MW3-W-01	9/25/1997	--	--	--	--	--	--	--	--
	MW-3-082511	8/25/2011	1.87	-92.8	6.95	0.718	20.5	--	--	--
	MW-3	8/22/2013	0.27	-99.8	6.37	0.739	21.5	< 100	< 300	2,430
MW-4	MW4-W-01	11/14/1997	--	--	--	--	--	--	--	--
	MW-4-082611	8/26/2011	1.26	-85.1	7.56	0.447	21.2	--	--	--
	MW-4	8/22/2013	0.10	51.3	9.22	0.599	21.5	< 100	39,100	80

Notes:

°C = degrees Celsius

mg/L = milligrams per liter

mV = millivolt

µg/L = micrograms per liter

µS/cm = microsiemens per centimeter

< = analyte not detected below reporting limit shown

-- = not tested

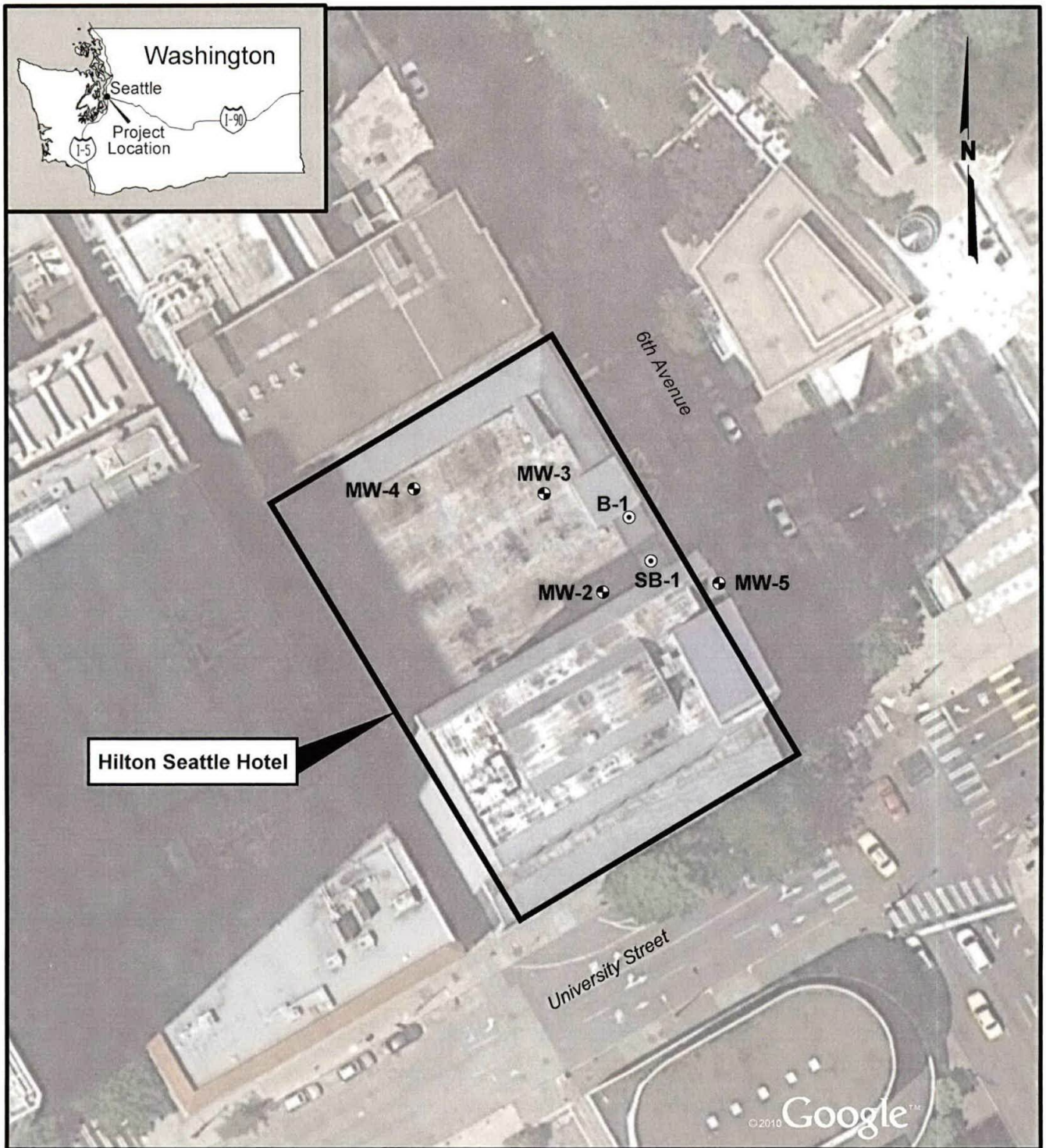
TABLE 4
WATER LEVEL DATA

Monitoring Well	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-2	9/25/1997	162.55	21.36	141.19
	8/25/2011	162.55	22.09	140.46
	8/22/2013	162.55	22.20	140.35
MW-3	9/25/1997	161.24	20.49	140.75
	8/25/2011	161.24	21.08	140.16
	8/22/2013	161.24	21.10	140.14
MW-4	11/14/1997	154.30	15.31	138.99
	8/26/2011	154.30	15.43	138.87
	8/22/2013	154.30	15.26	139.04
MW-5	11/14/1997	175.38	32.79	142.59
	8/26/2011	175.38	34.21	141.17
	8/14/2013	174.35	33.51	140.84

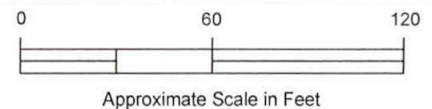
Notes:

Elevations were estimated from King County iMap (Aug 2011).

Depth to groundwater in 1997 and 2011 for MW-5 were adjusted to account for floating product.



- LEGEND**
- Approximate Parcel Boundary
 - MW-2** Monitoring Well Designation and Approximate Location
 - SB-1** Historical Boring Designation and Approximate Location



NOTE

Parcels adapted from "kcproperty_mapper2101634819006.pdf" downloaded 7-22-11 from <http://www5.kingcounty.gov>. Aerial imagery provided by Google Earth Pro, reproduced by permission granted by Google Earth™ Mapping Service.

Hilton Seattle Hotel
Seattle, Washington

SITE AND EXPLORATION PLAN

September 2013

21-1-12341-004

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 1

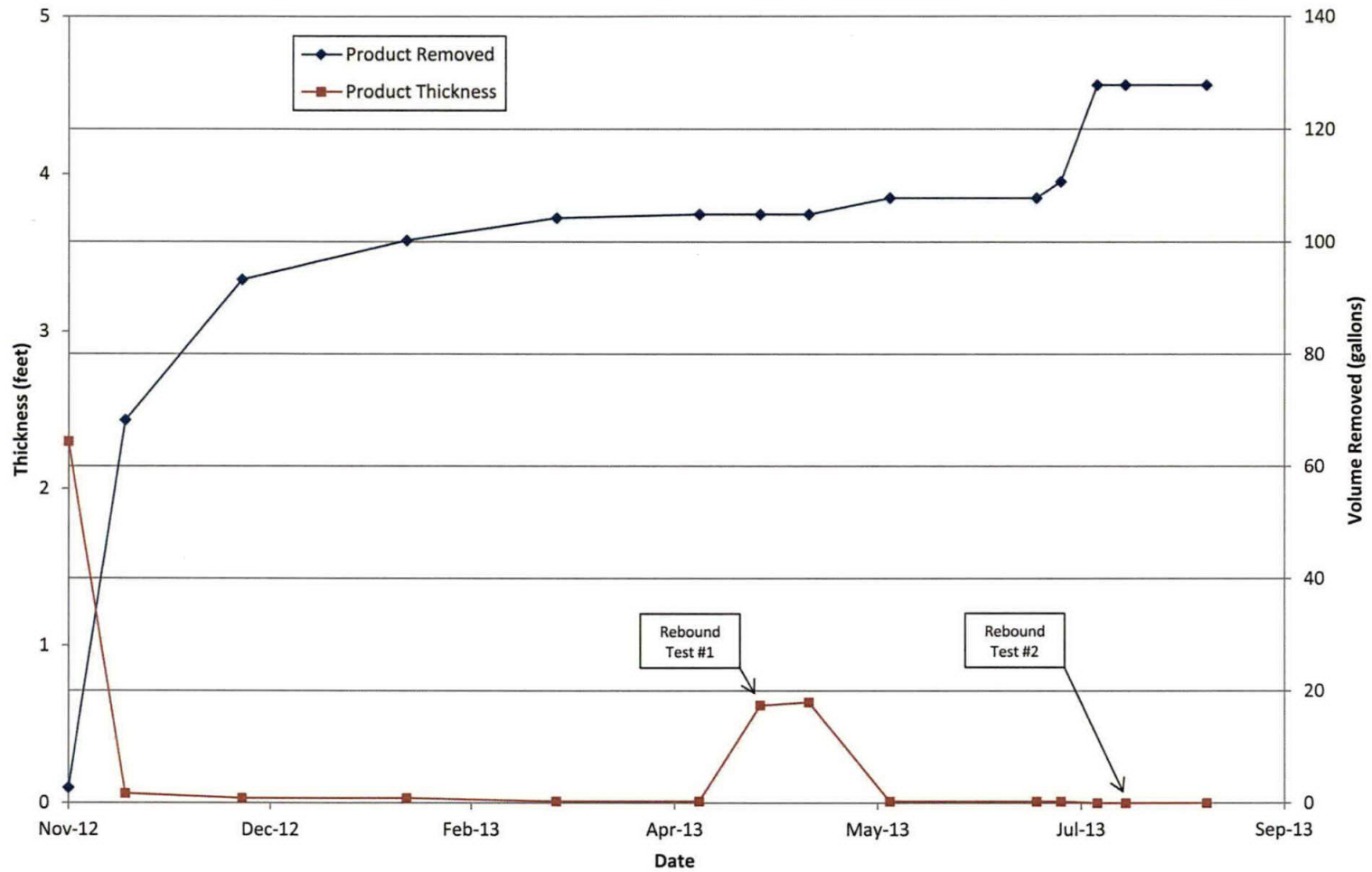


FIG. 2

Hilton Seattle Hotel
Seattle, Washington

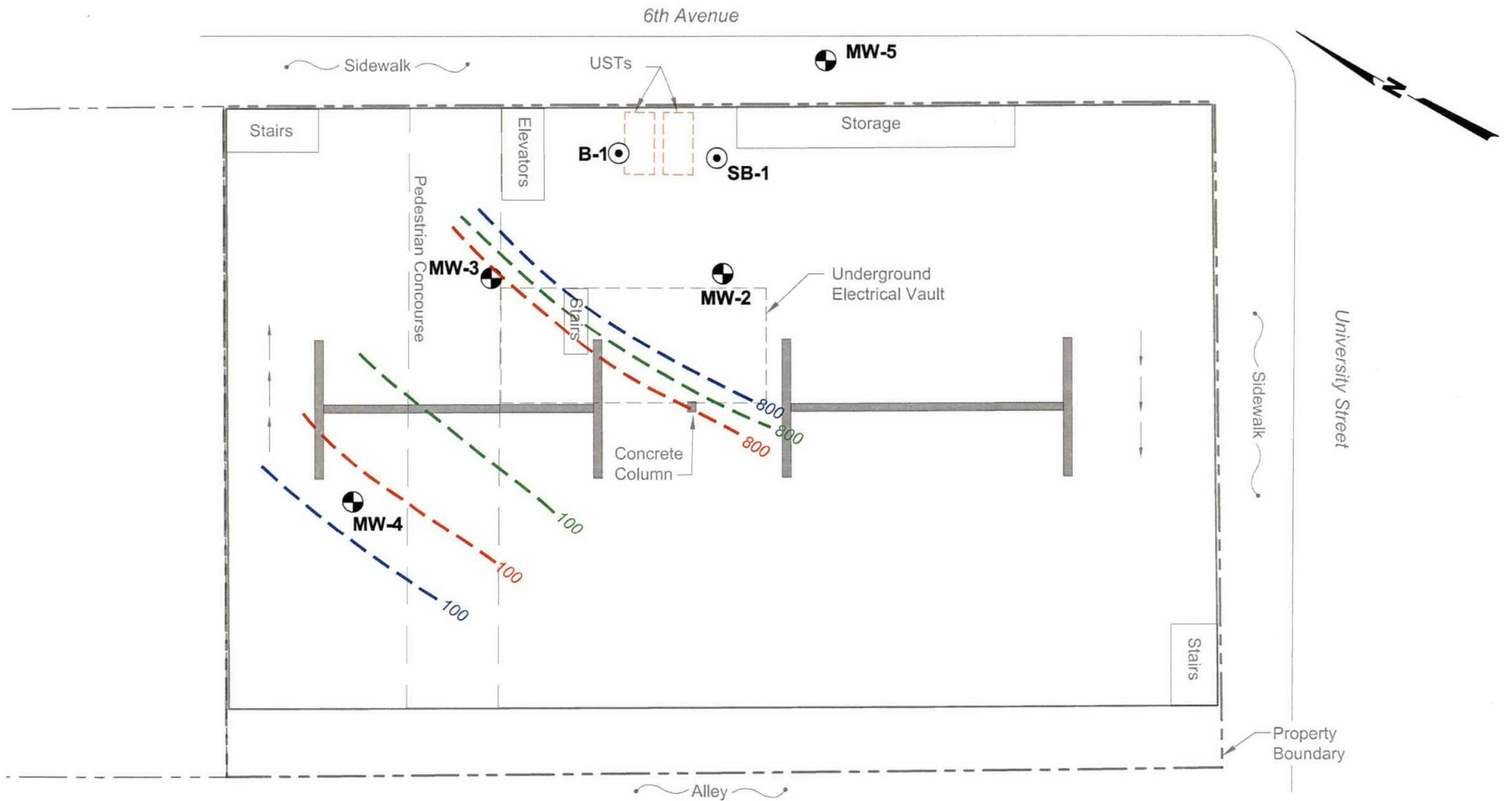
EXTRACTION SYSTEM PERFORMANCE

September 2013

21-1-12341-004

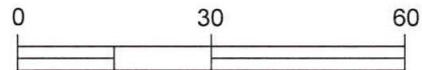
SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 2



LEGEND

-  Monitoring Well Designation and Approximate Location
-  Historical Boring Designation and Approximate Location
-  Approximate 1997 Gasoline Concentration Contour
-  Approximate 2011 Gasoline Concentration Contour
-  Approximate 2013 Gasoline Concentration Contour



Scale in Feet

NOTES

1. Locations of site features shown are approximate.
2. Figure originally produced in color.

Hilton Seattle Hotel
Seattle, Washington

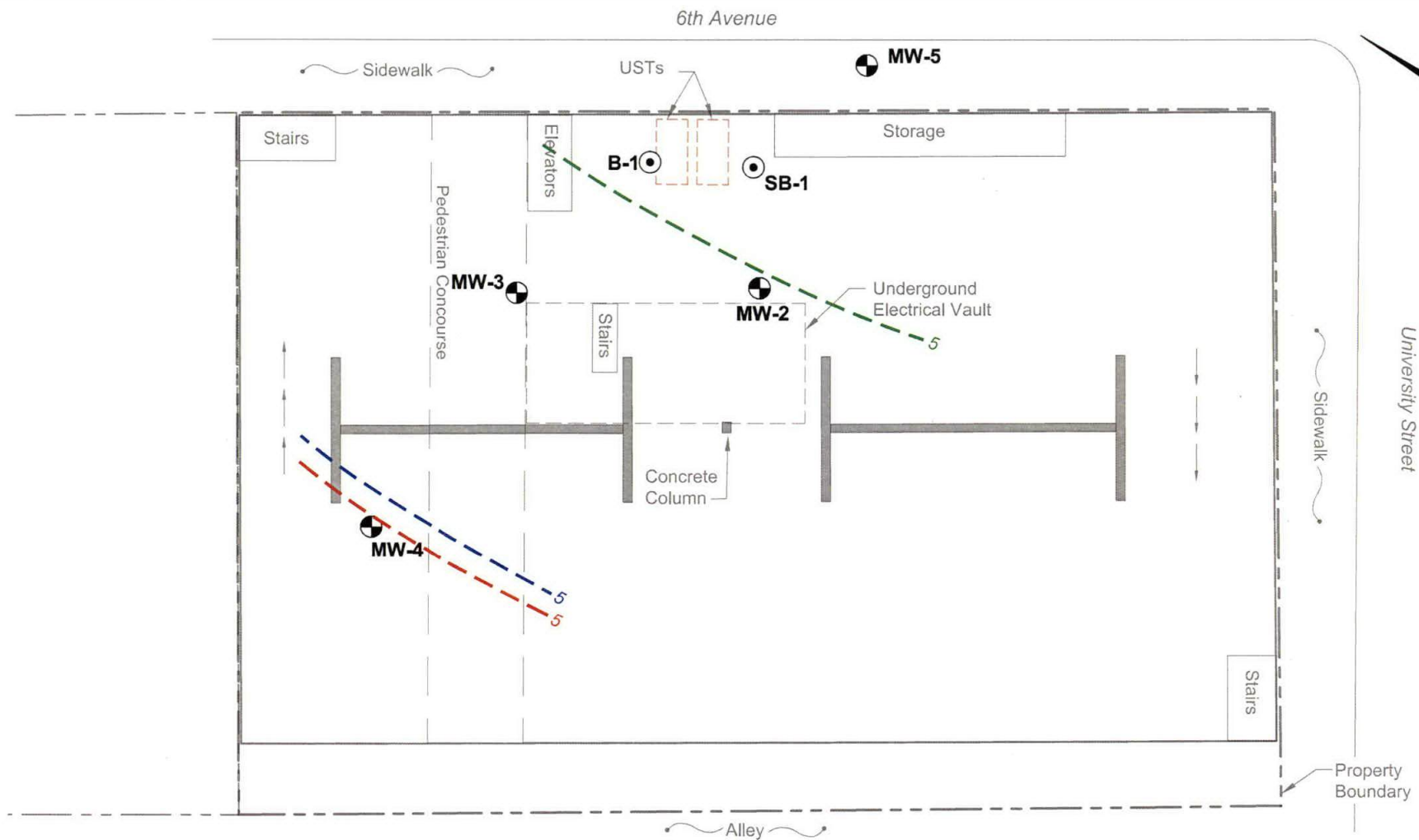
ESTIMATED EXTENT OF GASOLINE CONTAMINATION

September 2013

21-1-12341-004

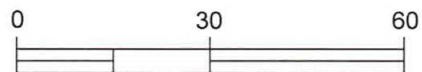
SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 3



LEGEND

-  Monitoring Well Designation and Approximate Location
-  Historical Boring Designation and Approximate Location
-  Approximate 1997 Benzene Concentration Contour
-  Approximate 2011 Benzene Concentration Contour
-  Approximate 2013 Benzene Concentration Contour



NOTES

1. Locations of site features shown are approximate.
2. Figure originally produced in color.

Hilton Seattle Hotel
Seattle, Washington

ESTIMATED EXTENT OF BENZENE CONTAMINATION

September 2013

21-1-12341-004

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 4

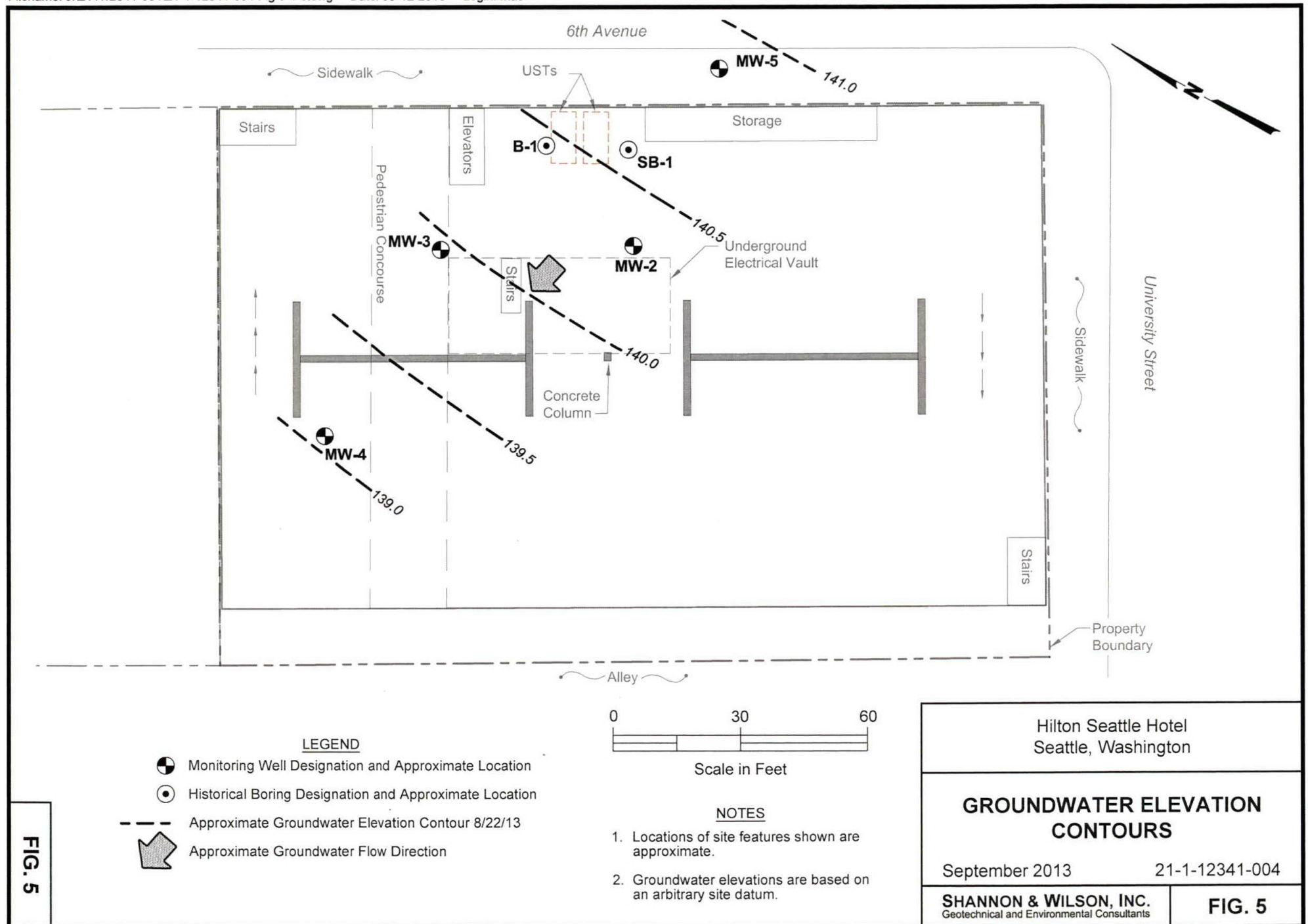


FIG. 5

APPENDIX A
ANALYTICAL LABORATORY REPORT



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Michael Reynolds
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: Hilton

Lab ID: 1308146

August 26, 2013

Attention Michael Reynolds:

Fremont Analytical, Inc. received 3 sample(s) on 8/22/2013 for the analyses presented in the following report.

Ferrous Iron by SM3500-Fe B

Gasoline by NWTPH-Gx

Ion Chromatography by EPA Method 300.0

Total Metals by EPA Method 200.8

Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Dee".

Michael Dee
Sr. Chemist / Principal



Fremont
Analytical

Date: 08/26/2013

CLIENT: Shannon & Wilson
Project: Hilton
Lab Order: 1308146

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1308146-001	MW-2	08/22/2013 3:10 PM	08/22/2013 3:40 PM
1308146-002	MW-3	08/22/2013 1:00 PM	08/22/2013 3:40 PM
1308146-003	MW-4	08/22/2013 12:05 PM	08/22/2013 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned



CLIENT: Shannon & Wilson

Project: Hilton

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Analytical Report

WO#: 1308146

Date Reported: 8/26/2013

Client: Shannon & Wilson

Collection Date: 8/22/2013 3:10:00 PM

Project: Hilton

Lab ID: 1308146-001

Matrix: Water

Client Sample ID: MW-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Gasoline by NWTPH-Gx</u>						
				Batch ID: R9725	Analyst: EM	
Gasoline	5,000	1,000	D	µg/L	20	8/23/2013 3:44:00 PM
Surr: 4-Bromofluorobenzene	93.8	65-135		%REC	1	8/23/2013 12:05:00 PM
Surr: Toluene-d8	106	65-135		%REC	1	8/23/2013 12:05:00 PM
<u>Volatile Organic Compounds by EPA Method 8260</u>						
				Batch ID: R9727	Analyst: EM	
Benzene	3.07	1.00		µg/L	1	8/23/2013 12:05:00 PM
Toluene	2.01	1.00		µg/L	1	8/23/2013 12:05:00 PM
Ethylbenzene	408	20.0	D	µg/L	20	8/23/2013 3:44:00 PM
m,p-Xylene	7.86	1.00		µg/L	1	8/23/2013 12:05:00 PM
o-Xylene	2.89	1.00		µg/L	1	8/23/2013 12:05:00 PM
Surr: Dibromofluoromethane	97.7	72.1-122		%REC	1	8/23/2013 12:05:00 PM
Surr: Toluene-d8	101	62.1-129		%REC	1	8/23/2013 12:05:00 PM
Surr: 1-Bromo-4-fluorobenzene	101	66.8-124		%REC	1	8/23/2013 12:05:00 PM
<u>Ion Chromatography by EPA Method 300.0</u>						
				Batch ID: R9721	Analyst: PH	
Nitrate	ND	0.100		mg/L	1	8/22/2013 4:49:00 PM
Sulfate	0.970	0.300		mg/L	1	8/22/2013 4:49:00 PM
<u>Total Metals by EPA Method 200.8</u>						
				Batch ID: 5257	Analyst: MC	
Lead	8.14	1.00		µg/L	1	8/23/2013 3:31:45 PM
<u>Ferrous Iron by SM3500-Fe B</u>						
				Batch ID: R9728	Analyst: MC	
Ferrous Iron	0.980	0.0300		mg/L	1	8/22/2013 4:39:33 PM

NOTES:

High sample turbidity may lead to results being biased high.

Qualifiers: B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
RL Reporting Limit

D Dilution was required
H Holding times for preparation or analysis exceeded
ND Not detected at the Reporting Limit
S Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1308146

Date Reported: 8/26/2013

Client: Shannon & Wilson

Collection Date: 8/22/2013 1:00:00 PM

Project: Hilton

Lab ID: 1308146-002

Matrix: Water

Client Sample ID: MW-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Gasoline by NWTPH-Gx

Batch ID: R9725

Analyst: EM

Gasoline	209	50.0		µg/L	1	8/23/2013 4:39:00 PM
Surr: 4-Bromofluorobenzene	96.8	65-135		%REC	1	8/23/2013 4:39:00 PM
Surr: Toluene-d8	106	65-135		%REC	1	8/23/2013 4:39:00 PM

Volatile Organic Compounds by EPA Method 8260

Batch ID: R9727

Analyst: EM

Benzene	ND	1.00		µg/L	1	8/23/2013 4:39:00 PM
Toluene	ND	1.00		µg/L	1	8/23/2013 4:39:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/23/2013 4:39:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/23/2013 4:39:00 PM
o-Xylene	ND	1.00		µg/L	1	8/23/2013 4:39:00 PM
Surr: Dibromofluoromethane	96.8	72.1-122		%REC	1	8/23/2013 4:39:00 PM
Surr: Toluene-d8	98.5	62.1-129		%REC	1	8/23/2013 4:39:00 PM
Surr: 1-Bromo-4-fluorobenzene	104	66.8-124		%REC	1	8/23/2013 4:39:00 PM

Ion Chromatography by EPA Method 300.0

Batch ID: R9721

Analyst: PH

Nitrate	ND	0.100		mg/L	1	8/22/2013 5:06:00 PM
Sulfate	ND	0.300		mg/L	1	8/22/2013 5:06:00 PM

Total Metals by EPA Method 200.8

Batch ID: 5257

Analyst: MC

Lead	ND	1.00		µg/L	1	8/23/2013 3:42:56 PM
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Ferrous Iron by SM3500-Fe B

Batch ID: R9728

Analyst: MC

Ferrous Iron	2.43	0.0300		mg/L	1	8/22/2013 4:43:33 PM
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Qualifiers: B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
RL Reporting Limit

D Dilution was required
H Holding times for preparation or analysis exceeded
ND Not detected at the Reporting Limit
S Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1308146

Date Reported: 8/26/2013

Client: Shannon & Wilson

Collection Date: 8/22/2013 12:05:00 PM

Project: Hilton

Lab ID: 1308146-003

Matrix: Water

Client Sample ID: MW-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Gasoline by NWTPH-Gx</u>						
				Batch ID: R9725		Analyst: EM
Gasoline	ND	50.0		µg/L	1	8/23/2013 1:00:00 PM
Surr: 4-Bromofluorobenzene	96.3	65-135		%REC	1	8/23/2013 1:00:00 PM
Surr: Toluene-d8	104	65-135		%REC	1	8/23/2013 1:00:00 PM
<u>Volatile Organic Compounds by EPA Method 8260</u>						
				Batch ID: R9727		Analyst: EM
Benzene	ND	1.00		µg/L	1	8/23/2013 1:00:00 PM
Toluene	ND	1.00		µg/L	1	8/23/2013 1:00:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/23/2013 1:00:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/23/2013 1:00:00 PM
o-Xylene	ND	1.00		µg/L	1	8/23/2013 1:00:00 PM
Surr: Dibromofluoromethane	97.9	72.1-122		%REC	1	8/23/2013 1:00:00 PM
Surr: Toluene-d8	99.6	62.1-129		%REC	1	8/23/2013 1:00:00 PM
Surr: 1-Bromo-4-fluorobenzene	103	66.8-124		%REC	1	8/23/2013 1:00:00 PM
<u>Ion Chromatography by EPA Method 300.0</u>						
				Batch ID: R9721		Analyst: PH
Nitrate	ND	0.100		mg/L	1	8/22/2013 5:23:00 PM
Sulfate	39.1	0.300		mg/L	1	8/22/2013 5:23:00 PM
<u>Total Metals by EPA Method 200.8</u>						
				Batch ID: 5257		Analyst: MC
Lead	ND	1.00		µg/L	1	8/23/2013 2:33:14 PM
<u>Ferrous Iron by SM3500-Fe B</u>						
				Batch ID: R9728		Analyst: MC
Ferrous Iron	0.0800	0.0300		mg/L	1	8/22/2013 4:51:33 PM

Qualifiers: B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
RL Reporting Limit

D Dilution was required
H Holding times for preparation or analysis exceeded
ND Not detected at the Reporting Limit
S Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT
Ferrous Iron by SM3500-Fe B

Sample ID: MB-R9728	SampType: MBLK	Units: mg/L	Prep Date: 8/22/2013	RunNo: 9728							
Client ID: MBLKW	Batch ID: R9728		Analysis Date: 8/22/2013	SeqNo: 195818							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	ND	0.0300									

Sample ID: LCS-R9728	SampType: LCS	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9728		
Client ID: LCSW	Batch ID: R9728					Analysis Date: 8/22/2013			SeqNo: 195819		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.940	0.0300	1.000	0	94.0	90	110				

Sample ID: 1308146-002CDUP	SampType: DUP	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9728		
Client ID: MW-3	Batch ID: R9728					Analysis Date: 8/22/2013			SeqNo: 195823		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	2.45	0.0300						2.430	0.820	20	

Sample ID: 1308146-003CMS	SampType: MS	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9728		
Client ID: MW-4	Batch ID: R9728					Analysis Date: 8/22/2013			SeqNo: 195825		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.850	0.0300	1.000	0.08000	77.0	75	125				

Qualifiers: B Analyte detected in the associated Method Blank D Dilution was required E Value above quantitation range
H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits ND Not detected at the Reporting Limit
R RPD outside accepted recovery limits RL Reporting Limit S Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT
Ion Chromatography by EPA Method 300.0

Sample ID: MB-R9721	SampType: MBLK	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9721		
Client ID: MBLKW	Batch ID: R9721					Analysis Date: 8/22/2013			SeqNo: 195613		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate	ND	0.100									
Sulfate	ND	0.300									

Sample ID: LCS-R9721	SampType: LCS	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9721		
Client ID: LCSW	Batch ID: R9721					Analysis Date: 8/22/2013			SeqNo: 195614		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate	6.43	0.100	6.000	0	107	90	110				
Sulfate	31.6	0.300	30.00	0	105	90	110				

Sample ID: 1308135-001BDUP	SampType: DUP	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9721		
Client ID: BATCH	Batch ID: R9721					Analysis Date: 8/22/2013			SeqNo: 195617		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate	0.847	0.100						0.8011	5.52	20	
Sulfate	22.6	0.300						22.58	0.150	20	

Sample ID: 1308135-001BMS	SampType: MS	Units: mg/L			Prep Date: 8/22/2013			RunNo: 9721			
Client ID: BATCH	Batch ID: R9721				Analysis Date: 8/22/2013			SeqNo: 195618			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate	7.44	0.100	6.000	0.8011	111	80	120				
Sulfate	57.5	0.300	30.00	22.58	116	80	120				

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT
Ion Chromatography by EPA Method 300.0

Sample ID: 1308135-001BMSD	SampType: MSD	Units: mg/L				Prep Date: 8/22/2013			RunNo: 9721		
Client ID: BATCH	Batch ID: R9721					Analysis Date: 8/22/2013			SeqNo: 195619		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate	7.45	0.100	6.000	0.8011	111	80	120	7.441	0.166	20	
Sulfate	57.8	0.300	30.00	22.58	117	80	120	57.52	0.471	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT
Total Metals by EPA Method 200.8

Sample ID: MB-5257	SampType: MBLK	Units: µg/L	Prep Date: 8/23/2013	RunNo: 9741							
Client ID: MBLKW	Batch ID: 5257		Analysis Date: 8/23/2013	SeqNo: 195947							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.00									

Sample ID: LCS-5257	SampType: LCS	Units: µg/L				Prep Date: 8/23/2013			RunNo: 9741		
Client ID: LCSW	Batch ID: 5257					Analysis Date: 8/23/2013			SeqNo: 195948		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.2	1.00	50.00	0	102	85	115				

Sample ID: 1308146-003BDUP	SampType: DUP	Units: µg/L			Prep Date: 8/23/2013			RunNo: 9741			
Client ID: MW-4	Batch ID: 5257				Analysis Date: 8/23/2013			SeqNo: 195950			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.00						0	0	30	

Sample ID: 1308146-003BMS	SampType: MS	Units: µg/L				Prep Date: 8/23/2013			RunNo: 9741		
Client ID: MW-4	Batch ID: 5257					Analysis Date: 8/23/2013			SeqNo: 195951		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	234	1.00	250.0	0.3455	93.4	70	130				

Sample ID: 1308146-003BMSD	SampType: MSD	Units: µg/L				Prep Date: 8/23/2013			RunNo: 9741		
Client ID: MW-4	Batch ID: 5257					Analysis Date: 8/23/2013			SeqNo: 195952		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	238	1.00	250.0	0.3455	94.9	70	130	233.9	1.51	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT**Gasoline by NWTPH-Gx**

Sample ID: LCS-R9725	SampType: LCS	Units: µg/L				Prep Date: 8/22/2013			RunNo: 9725		
Client ID: LCSW	Batch ID: R9725					Analysis Date: 8/22/2013			SeqNo: 195743		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	607	50.0	500.0	0	121	65	135				
Surr: Toluene-d8	51.3		50.00		103	65	135				
Surr: 4-Bromofluorobenzene	46.4		50.00		92.8	65	135				

Sample ID: MB-R9725	SampType: MBLK	Units: µg/L			Prep Date: 8/22/2013			RunNo: 9725			
Client ID: MBLKW	Batch ID: R9725				Analysis Date: 8/22/2013			SeqNo: 195752			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0									
Surr: Toluene-d8	51.1		50.00		102	65	135				
Surr: 4-Bromofluorobenzene	46.6		50.00		93.2	65	135				

Sample ID: 1308146-003ADUP	SampType: DUP	Units: µg/L				Prep Date: 8/23/2013			RunNo: 9725		
Client ID: MW-4	Batch ID: R9725					Analysis Date: 8/23/2013			SeqNo: 195903		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0						0	0	30	
Surr: Toluene-d8	51.8		50.00		104	65	135		0	0	
Surr: 4-Bromofluorobenzene	47.8		50.00		95.6	65	135		0	0	

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

D Dilution was required
J Analyte detected below quantitation limits
RL Reporting Limit

E Value above quantitation range
ND Not detected at the Reporting Limit
S Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: 1308130-013AMS	SampType: MS	Units: µg/L	Prep Date: 8/23/2013	RunNo: 9727							
Client ID: BATCH	Batch ID: R9727		Analysis Date: 8/23/2013	SeqNo: 195799							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	18.2	1.00	20.00	0	90.9	68.7	132				
Toluene	18.0	1.00	20.00	0	90.1	68.4	133				
Ethylbenzene	18.2	1.00	20.00	0	90.9	67.3	135				
m,p-Xylene	36.1	1.00	40.00	0	90.3	63.3	135				
o-Xylene	18.0	1.00	20.00	0	89.8	67.8	131				
Surr: Dibromofluoromethane	49.5		50.00		99.0	72.1	122				
Surr: Toluene-d8	48.8		50.00		97.6	62.1	129				
Surr: 1-Bromo-4-fluorobenzene	49.4		50.00		98.8	66.8	124				

Sample ID: LCS-R9727	SampType: LCS	Units: µg/L				Prep Date: 8/22/2013			RunNo: 9727		
Client ID: LCSW	Batch ID: R9727					Analysis Date: 8/22/2013			SeqNo: 195814		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	20.4	1.00	20.00	0	102	75.2	124				
Toluene	19.7	1.00	20.00	0	98.4	75.2	129				
Ethylbenzene	20.0	1.00	20.00	0	100	78	127				
m,p-Xylene	40.4	1.00	40.00	0	101	77.5	130				
o-Xylene	20.1	1.00	20.00	0	100	77.6	126				
Surr: Dibromofluoromethane	49.1		50.00		98.2	72.1	122				
Surr: Toluene-d8	49.2		50.00		98.4	62.1	129				
Surr: 1-Bromo-4-fluorobenzene	48.8		50.00		97.7	66.8	124				

Sample ID: MB-R9727	SampType: MBLK	Units: µg/L	Prep Date: 8/22/2013	RunNo: 9727							
Client ID: MBLKW	Batch ID: R9727		Analysis Date: 8/22/2013	SeqNo: 195815							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	1.00									
Toluene	ND	1.00									

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Date: 8/26/2013

Work Order: 1308146
CLIENT: Shannon & Wilson
Project: Hilton

QC SUMMARY REPORT**Volatile Organic Compounds by EPA Method 8260**

Sample ID: MB-R9727	SampType: MBLK	Units: µg/L			Prep Date: 8/22/2013			RunNo: 9727			
Client ID: MBLKW	Batch ID: R9727				Analysis Date: 8/22/2013			SeqNo: 195815			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Surr: Dibromofluoromethane	50.0		50.00		100	72.1	122				
Surr: Toluene-d8	49.3		50.00		98.7	62.1	129				
Surr: 1-Bromo-4-fluorobenzene	50.1		50.00		100	66.8	124				

Sample ID: 1308146-003ADUP	SampType: DUP	Units: µg/L			Prep Date: 8/23/2013			RunNo: 9727			
Client ID: MW-4	Batch ID: R9727				Analysis Date: 8/23/2013			SeqNo: 195895			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00						0	0	30	
Toluene	ND	1.00						0	0	30	
Ethylbenzene	ND	1.00						0	0	30	
m,p-Xylene	ND	1.00						0	0	30	
o-Xylene	ND	1.00						0	0	30	
Surr: Dibromofluoromethane	49.4		50.00		98.7	72.1	122		0		
Surr: Toluene-d8	49.1		50.00		98.2	62.1	129		0		
Surr: 1-Bromo-4-fluorobenzene	51.4		50.00		103	66.8	124		0		

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

D Dilution was required
J Analyte detected below quantitation limits
RL Reporting Limit

E Value above quantitation range
ND Not detected at the Reporting Limit
S Spike recovery outside accepted recovery limits



Sample Log-In Check List

Client Name: **SW**

Work Order Number: **1308146**

Logged by: **Clare Griggs**

Date Received: **8/22/2013 3:40:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Required ☒
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all coolers received at a temperature of $>0^{\circ}\text{C}$ to 10.0°C ? Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is the headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

19. Additional remarks:

Item Information

Item #	Temp °C	Condition
Cooler	9.0	Good
Sample	8.5	Good



Fremont

Analytical

3500 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record

Laboratory Project No (Internal): 1808146

Date: 8/22/13

Page: 1 of: 1

Client: Shannon & Wilson
Address: 400 N 34th St, Suite 100
City, State, Zip: Seattle, WA

Project Name: Hilton
Location: 6th & University
Collected by: EVP

Tel: 206-632-8020

Reports To (PM): Michael Reynolds

Fax:

Email:

msreskanwi.com

Project No: 21-1-12341-004

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	VOC (EPA 8260)	GV/PEL by EPA 8021b	BTEX by EPA 8021b	Gasoline Range Organics	Hydrocarbon Identification (HCD)	Diesel/Heavy Oil Range Organics	SEMI VOL (EPA 8270)	PAH (EPA 8270)	PBAs (EPA 8270 - SIM)	CLP pesticides (EPA 8092)	CI Herbicides (EPA 8081)	Metals* (EPA 8151A)	Total (T) (EPA 8210/200.5)	Anions (ICP*)	Comments/Depth
1 MW-2	8/22/13	1510	GW	X										X	TX			
2 MW-3	1	1300	1	X										X	TX			
3 MW-4	1	1205	1	X										X	TX			
4																		
5																		
6																		
7																		
8																		
9																		
10																		

*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Pb Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished: [Signature] Date/Time: 8/22/13 1540

Received: [Signature] Date/Time: 8/22/13 1540

Special Remarks:

Ferrous Iron

TAT -> Next Day 2 Day 3 Day STO

Appendix B

APPENDIX B
DISPOSAL DOCUMENTATION

SHIPPER NO. _____

Carrier No. _____

Date: 12.17.12

Page _____ of _____

(Name of carrier)

(SCAC)

1 Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec. 1.

'O:

onsignee

treet

ity

State.

Zip Code

FROM:
Shipper

Street

City

Stat

Zip Code

24 hr. Emergency Contact Tel. No. _____

Vehicle
NumberPLACARDS TENDERED: YES ☐ NO ☐

lots — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to not exceed _____."

Where the applicable tariff provisions specify a limitation of the carrier's liability absent release or a value declaration by the shipper and the shipper does not release, the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.

[illegible]

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Signature

REMIT
C.O.D. TO:
ADDRESS

COD

Amt: \$

C.O.D. FEE:
PREPAID ☐
COLLECT ☐

TOTAL CHARGES	\$
----------------------	----

FREIGHT CHARGES

FREIGHT PREPAID except when box at right is checked	Check box if charges are to be collected
☐	☐

RECEIVED, subject to the classifications and tariffs in effect on the date of the Issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to des-

ination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

TIPPER

三

CARRIER

PFR

DATE _____

Permanent post-office address of shipper.



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PRINTED WITH
SOY INK

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4

Snipper No.

Carrier No.

Date Dec 24 2013

(Name of carrier)

(SCAC)

FROM:

Shipper

insignée

reest

ly COPIES.

State, VA

Zip Code 06719

24 hr. Emergency Contact Tel. No. _____

rate .

Vehicle

Number. 22

PLACARDS TENDERED: YES ☐ NO ☐

oto — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to not exceeding _____ per _____."

Where the applicable tariff provisions specify a limitation of the carrier's liability absent release or a value declaration by the shipper and the shipper does not release carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.

Commodities requiring special or additional care or attention in handling or stowing shall be so marked and packaged as to ensure safe transportation. See Section 2(e) of Section 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations.

Signature

REMIT
C.O.D. TO:
ADDRESS

COD

Amt: \$

O.O.D. FEE:
PREPAID ☐
COLLECT ☐

TOTAL CHARGES	\$
----------------------	-----------

FREIGHT CHARGES	
Freight	1.00
Insurance	0.00
Warehouse	0.00
Handling	0.00
Other	0.00
Total	1.00

FREIGHT PREPAID
except when box at
right is checked

☐ Check box if charges are to be collected

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier, by the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, or, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route in transit.

tion and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

IPPER

Ⓡ

CARRIER

PFR

DATE _____

Permanent post-office address of shipper.



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PAID TO ORDER

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APPENDIX C

**IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL/ENVIRONMENTAL REPORT**



Date: September 30, 2013

To: Mr. Zahoor Ahmed
RC Hedreen Company

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland