

**Groundwater Monitoring Report,
Second Quarter 2016**

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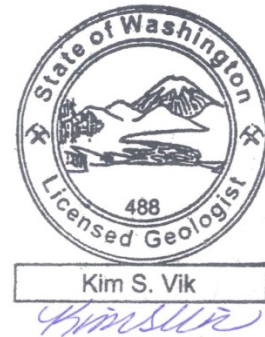
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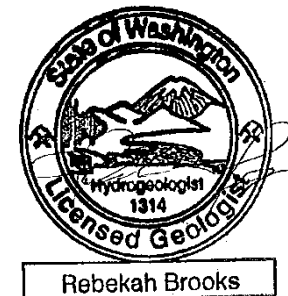
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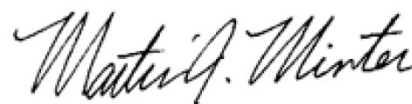


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Acronyms & Abbreviations

µg/L	micrograms per liter
2Q2016	Second Quarter 2016
3Q2016	Third Quarter 2016
4Q2016	Fourth Quarter 2016
AO	Agreed Order
bgs	below ground surface
CSM	conceptual site model
DPE	dual-phase extraction
DRPH	diesel-range petroleum hydrocarbons
DTP	depth-to-product
DTW	depth-to-water
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
GRPH	gasoline-range petroleum hydrocarbons
HydroCon	HydroCon Environmental, LLC
ID	identifier
IRAWP	Interim Remedial Action Work Plan
LNAPL	light non-aqueous phase liquid
MDL	method detection limit
mL/min	milliliters per minute
MPE	multi-phase extraction
MRL	method reporting limit
MTBE	methyl tert-butyl ether
MTCA	Model Toxics Control Act
MW	monitoring well
PACE	PACE Engineers, Inc.
PAH	petroleum aromatic hydrocarbons
QA/QC	quality assurance/quality control
RI	remedial investigation
ROW	right-of-way
RW	remediation well
SES	SoundEarth Strategies, Inc.
Stantec	Stantec Consulting Services Inc.
TOC	TOC Holdings Co.
UST	underground storage tank

LIST OF PROPERTIES – TOC SITE

TOC Property	24205 56th Avenue West, Mountlake Terrace, WA
TOC/Farmasonis Property	24225 56th Avenue West, Mountlake Terrace, WA
Drake Property	24309 56th Avenue West, Mountlake Terrace, WA
56th Avenue West ROW	Right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties

LIST OF PROPERTIES – ADJACENT TO TOC SITE

242nd Street Southwest ROW	Right-of-way adjacent to TOC Property
Herman Property	24311 56th Avenue West, Mountlake Terrace, WA
Shin/Choi Property	24325 56th Avenue West, Mountlake Terrace, WA

1.0 INTRODUCTION

This report presents the results of the Second Quarter 2016 (2Q2016) groundwater monitoring event for the interim remedial action at the TOC Holdings Co. (TOC) Facility No. 01-176 located in Mountlake Terrace, Snohomish County, Washington (**Figure 1**). Field activities were performed by HydroCon Environmental, LLC (HydroCon) and data evaluation was performed by Stantec Consulting Services Inc. (Stantec), as a subconsultant to HydroCon.

Ongoing groundwater monitoring is conducted under Agreed Order (AO) No. DE 8661, entered in October 2011 between TOC and the Washington State Department of Ecology (Ecology 2011). The groundwater monitoring scope of work is defined in the *Interim Remedial Action Work Plan* (IRAWP; SES 2011) included as Exhibit C of the AO. Per the requirements of the IRAWP, the groundwater monitoring scope of work includes one annual field event and three quarterly field events (described in **Section 6.0**). Groundwater monitoring is conducted to monitor and evaluate the performance and efficacy of three multi-phase extraction (MPE) remediation systems (described in **Section 5.0**) and their effect on groundwater quality.

This report presents a description of the 2Q 2016 groundwater monitoring activities with an evaluation of the field data and analytical results. The field dates of the 2Q2016 groundwater monitoring events were May 12 to 26, 2016. On June 23, 2016, selected wells were also sampled. A description of the site, adjacent properties and site background is provided in **Section 2.0**. The geologic and hydrologic frameworks are described in **Sections 3.0 and 4.0**, respectively. A summary of the remediation system status is provided in **Section 5.0**. The scope of work for the groundwater monitoring events is described in **Section 6.0**. Field methodologies for collecting depth-to-water/depth-to-product (DTW/DTP) level measurements and groundwater samples in accordance with the IRAWP (SES 2011) or using approved modifications are described in **Section 7.0**. Groundwater monitoring results for the three quarterly events are described in **Section 8.0**, and a summary of the results and a list of conclusions for the quarterly events are provided in **Section 9.0**. Future groundwater monitoring tasks are described in **Section 10.0**.

2.0 SITE DESCRIPTION & BACKGROUND

2.1 Description of TOC Site

As specified in the AO, the boundary of the "TOC Site" encompasses the following properties (**Figure 2**):

- **TOC Property:** 24205 56th Avenue West. The vacant TOC Property consists of vegetated land with the exception of an asphalt area and graveled and fenced area housing a MPE remediation system (described in **Section 5.0**).
- **TOC/Farmasonis Property:** 24225 56th Avenue West. The TOC/Farmasonis Property consists of one vacant commercial building (formerly occupied by Romio's restaurant through June 2014), an asphalt parking area, vegetated land, and a graveled and fenced area housing two MPE remediation systems (described in **Section 5.0**).
- **Drake Property:** 24309 56th Avenue West. The Drake Property consists of one commercial building (currently occupied by Getaway Tavern) and asphalt and gravel parking areas.
- **56th Avenue West Right-of-Way (ROW):** The portion of the 56th Avenue ROW included in the TOC Site is adjacent to the TOC, TOC/Farmasonis and Drake properties.

The TOC Site is bordered by 242nd Street Southwest and commercial properties to the north; by residential properties to the east and west; and by the Herman Property and Mountlake Senior Property to the south where construction began for an assisted living facility in February 2015. The Snohomish County boundary is defined by 244th Street and the King County boundary is defined by 205th Street. Descriptions of each property included within the TOC Site boundary are provided below.

2.2 Description of Adjacent Properties

In addition to the TOC Site, the scope of work for the quarterly events (described in **Section 6.0**) also includes the following adjacent properties:

- **242nd Street Southwest ROW:** The portion of the ROW included in the scope of the work is adjacent to the northern boundary of the TOC Site.
- **Herman Property:** 24311 56th Avenue West. The Herman Property consists of one commercial building (occupied by Dave's Auto Service), an asphalt parking area and vegetated land.
- **Shin/Choi Property:** The Shin/Choi Property consists of one building (occupied by the EZ Corner Mart) and an asphalt parking area.

2.3 Site Background

TOC operated a retail gasoline station on the TOC Property between 1968 and 1990. The facility included three underground storage tanks (USTs), six fuel dispensers and associated product delivery lines. One 8,000-gallon and two 6,000-gallon USTs and ancillary equipment were removed from the TOC Property in 1991 and petroleum constituents in the form of gasoline-range petroleum hydrocarbons (GRPH), benzene, and total xylenes were observed in soil and groundwater in excess of the applicable Model Toxics Control Act (MTCA) Method A cleanup levels (Ecology 2007). Between 1992 and 2013, site investigations were conducted to determine the extent of petroleum contamination and 107

monitoring and remediation wells (six of which have been decommissioned) were installed in three groundwater zones (defined as Shallow, Intermediate, and Deep and further described in **Section 4.0**).

In 1996, a dual-phase extraction (DPE) remediation system was installed at the TOC Property at six remediation wells (MW01, MW02, MW03, MW09, MW10, and MW11) to remediate groundwater impacted by petroleum hydrocarbons and remove light non-aqueous phase liquid (LNAPL) in the Shallow Zone. The DPE system operated from February 1997 to June 2005 and was later removed following confirmation that the system effectively remediated Shallow Zone groundwater (SES 2013). In 2006, groundwater monitoring results collected by SoundEarth Strategies (SES) confirmed gasoline-related contamination in the Intermediate Zone extended directly downgradient of the TOC Property to the south (TOC/Farmasonis and Drake properties) and west (56th Avenue ROW).

In accordance with the AO (Ecology 2011), a remedial investigation (RI) was initiated at the TOC Site and three MPE remediation systems were installed between November 2011 and August 2012 to remediate residual petroleum-contaminated groundwater, soil vapor and LNAPL (if present) in the Intermediate Zone beneath the TOC Site. As shown in **Figure 3**, the MPE remediation systems are located within fenced enclosures on the TOC Property and TOC/Farmasonis Property and are served by remediation wells installed on the TOC, TOC/Farmasonis and Drake properties.

Available information regarding historical operations on the TOC/Farmasonis and Drake properties do not indicate the presence of USTs. Historical operations on the downgradient Herman and Shin/Choi properties indicate three USTs were removed from the Shin/Choi Property in 1991, and two USTs were removed from the Herman Property in 2001; however five additional USTs may still exist on the Herman Property. Available information on historical or current USTs and associated equipment located on downgradient properties is shown in **Figure 3**.

At the time of the 2016 quarterly field events, 103 active monitoring and remediation wells were located on seven properties (the four properties included within the TOC Site boundary [described in **Section 2.1**] plus the adjacent 242nd Street ROW, and Herman and Shin/Choi properties described in **Section 2.2**).

3.0 GEOLOGIC FRAMEWORK

The TOC Site is situated on the glacial upland plateau between Seattle and Everett, Washington, known as the Intercity Plateau. As documented in the *Draft RI Report* (SES 2013), the regional geology consists of Pleistocene-age glacial till locally overlain by pockets of glacial recessional outwash sand (Galster and Laprade 1991).

The recessional outwash sand, which ranges in thickness from approximately 25 to 300 feet, is generally loose to medium dense sand and gravel with little or no fines, and may include ice contact deposits and ablation till. The glacial till, which represents the ground moraine of the Vashon glaciations, ranges from a few feet to over 50 feet thick and consists of dense to very dense gravelly, sandy silt to silty sand with variable amounts of clay, cobbles, and boulders. Groundwater is perched above and within the glacial till layer. Bedrock underlying the area consists of Tertiary sediment rocks (sandstone, shale, or conglomerate) over 900 feet deep beneath the TOC Site; therefore, bedrock is not relevant for the TOC Site characterization.

Based on the results of previous investigations conducted between 1991 and 2013, subsurface soil beneath the TOC Site consists primarily of local anthropogenic fill overlying Vashon-age glacial deposits. Based on regional geologic unit interpretations for the area, the *Draft RI Report* states subsurface soil is interpreted to consist of the following geologic units, from youngest to oldest: artificial (anthropogenic) fill, Vashon glacial outwash deposits, Vashon glacial till and Vashon glacial outwash deposits (SES 2013).

4.0 HYDROGEOLOGIC FRAMEWORK

Three separate groundwater zones were identified at the TOC Site in the *Draft RI Report* (SES 2013). The zones were defined by SES based on lithology, well screen intervals and groundwater level measurements. Stantec evaluated the data as part of updates and revisions to the Conceptual Site Model (CSM), based on comments provided by Ecology to SES on the *Draft RI Report* (Ecology 2014). Stantec will incorporate the results of the revised CSM into the final RI report for submittal to Ecology.

Stantec agrees that three groundwater zones can be identified at the TOC Site; however, these zones do not appear to be separate, but are interconnected, as evidenced by the geology, groundwater elevations and contaminant distribution data. Also, the groundwater zones do not appear to be separated by distinct confining units defined by lower permeability lithology. Stantec's conceptualization of the hydrogeology is currently based on geologic field interpretations (e.g., boring logs) provided by SES and other consultants that previously managed the project, but will be supplemented by future investigations and development of the revised CSM. Based on evaluation of the available data by Stantec, the following sections describe the three groundwater zones, as well as locations where well screen intervals intersect multiple groundwater zones. For discussion of the monitoring event results in **Sections 8.0 and 9.0**, monitoring and remediation wells are placed into five categories based on groundwater zones and well screen intervals intersecting these zones. The five categories are defined as: 1) Shallow Zone Wells; 2) Intermediate Zone Wells; 3) Deep Zone Wells; 4) Shallow-Intermediate Zone Intersect Wells; and 5) Intermediate-Deep Zone Intersect Well.

4.1 Shallow Water-Bearing Zone (Shallow Zone)

The Shallow Zone is a perched zone in the artificial fill or upper portion of the glacial outwash/till, at depths between approximately 5 to 20 feet below ground surface (bgs) throughout the TOC Site, depending on seasonal fluctuations of the water table. The saturation in these horizons can be seasonally discontinuous, as evidenced by some monitoring wells that are seasonally dry (e.g., MW04 is typically dry during the fourth quarter event), while other Shallow Zone wells monitored during the same season contain water. The primary source of recharge to the Shallow Zone is infiltration of natural precipitation through emplaced fill and native soil in unpaved areas. Other potential sources of recharge to the Shallow Zone reportedly included a former topographically closed depression, where surface runoff previously ponded, and a former stormwater infiltration pit (identified in **Figure 3**), both of which were located in the southeast portion of the TOC Property. According to a 1975 TOC blueprint (Time Oil Co. 1975), the stormwater infiltration pit is located in proximity to MW18 and MW33; measures 10 feet square by 4 feet deep; and was backfilled with coarse gravel. Surface runoff intercepted by a catch basin located near the southeast corner of the paved asphalt area on the TOC Property formerly discharged into the stormwater infiltration pit via a 6-inch-diameter drain pipe, which has been capped.

4.2 Intermediate Water-Bearing Zone (Intermediate Zone)

The Intermediate Zone is an unconfined groundwater zone that is observed at depths between approximately 20 and 60 feet bgs. As described in the *Draft RI Report* (SES 2013), the Intermediate Zone consists of glacial till deposits between approximately 20 and 40 feet bgs and discontinuous sand and/or gravel-rich glacial deposits within the lower portion of the glacial till between approximately 40 and 60 feet bgs. As discussed further in **Section 8.2.2**, groundwater elevations in the Intermediate Zone

of the TOC Property appear to be mounded such that the upper boundary of the Intermediate Zone appears closer to the base of the Shallow Zone in the vicinity of the UST excavation fill area and former stormwater infiltration pit (identified in **Figure 3**). Explanations for the observed groundwater mounding are likely related to artificial recharge within the backfill of the former UST cavity, depression, and the infiltration pit; the presence of low permeability deposits near the downgradient edge of the property; and/or from localized influence of the vacuum for the remediation system located on the TOC Property (identified in **Figure 3** and described in **Sections 2.3 and 5.0**). The low permeability deposits in the upper portion of the Intermediate Zone impede the vertical percolation of water into the Deep Zone (see **Section 4.3**) and decrease the horizontal flux of the groundwater in the immediate vicinity. The prevalence of low permeability deposits correlates with the location of steeper horizontal hydraulic gradients in this area (see **Section 8.2**). In downgradient areas where the Intermediate Zone consists primarily of higher permeability units (i.e., sands and gravels), the thickness of unsaturated materials and the distance between the Shallow and Intermediate Zones increase. The higher permeability deposits contribute to a flattening of the horizontal hydraulic gradient. The Intermediate Zone appears to receive recharge from natural precipitation via the Shallow Zone. A comparison of groundwater elevations and analytical data confirm that the Intermediate Zone is considered to be the primary contaminant transport pathway at the TOC Site; however, as described in **Section 5.0**, the remediation systems appear to be containing contaminant transport from migrating further downgradient.

4.3 Deep Water-Bearing Zone (Deep Zone)

The Deep Zone consists of glacial sand and gravel located at depths greater than 60 feet bgs, based on deep well screen intervals. Within the vicinity of the artificial recharge area on the TOC Property, the groundwater elevation data indicate that downward vertical gradients appear to exist between all three zones. In downgradient areas, the groundwater elevation data suggest that vertical gradients shift from downward (between the Shallow and Intermediate Zones) to neutral or slightly upward (between the Intermediate and Deep Zones). Based on these observations and the presence of fully saturated well screens, these groundwater level conditions could be a reflection of a higher permeability zone at the base of a single groundwater unit that includes both the Intermediate and Deep Zones or could represent semi-confined conditions in a separate, but interconnected groundwater zone; however, the presence of a low permeability confining unit between the two zones is not obvious in the available data. The presence of upward vertical gradients between the Deep and Intermediate Zones appear to be effective in inhibiting downward migration of contamination in downgradient areas and effectively bounding the extent of vertical contamination.

4.4 Well Screen Intervals Intersecting Multiple Water-Bearing Zones

Based on evaluation of available data by Stantec, 16 wells (15 of which are active and one of which was decommissioned) appear to have screen intervals that intersect multiple groundwater zones (either Shallow and Intermediate Zones or Intermediate and Deep Zones) and may not represent the individual hydrogeological conditions of either zone. Because Shallow Zone contamination in the area where these wells are located has been remediated, the potential for cross-contamination between groundwater zones does not currently exist.

5.0 REMEDIATION SYSTEM STATUS

In accordance with the AO (Ecology 2011), three MPE remediation systems were installed between November 2011 and August 2012 to remediate residual petroleum-contaminated groundwater, soil vapor and LNAPL (if present) in the Intermediate Zone beneath TOC Site. As shown in **Figure 3**, the MPE remediation systems are located within fenced enclosures on the TOC Property and TOC/Farmasonis Property and are served by remediation wells installed on the TOC, TOC/Farmasonis and Drake properties.

At the time of 2Q2016 quarterly field event, 21 of the 22 remediation wells connected to the MPE remediation systems were actively operating. The pump in remediation well MW95 (located on the Drake Property) was turned off on April 30, 2015. The pump has remained off since that time and will only operate for sample collection during annual sampling events conducted during the first quarter of each year. The table below identifies the remediation wells connected to each system and their location. As noted next to the well identifier (ID), remediation wells are either 2 or 4 inches in diameter. Operation of all three MPE remediation systems is ongoing.

MPE Remediation System Wells

System Name	System Location	Remediation Well ID	Location of Remediation Wells
Unit 1	TOC Property	<ul style="list-style-type: none"> • MW11 (4" RW) • MW18 (4" RW) • MW24 (4" RW) • MW27 (2" RW) • MW29 (2" RW) • MW32 (4" RW) • MW90 (4" RW) • MW91 (4" RW) 	TOC Property
Unit 2	TOC/Farmasonis Property	<ul style="list-style-type: none"> • MW31 (2" RW) • MW41 (2" RW) • MW57 (4" RW) • MW92 (4" RW) • MW93 (4" RW) • MW94 (4" RW) 	TOC/Farmasonis Property
Unit 3	TOC/Farmasonis Property	<ul style="list-style-type: none"> • MW69 (2" RW) • MW70 (2" RW) • MW95 (4" RW)* • MW96 (4" RW) • MW97 (4" RW) • MW98 (4" RW) • MW99 (4" RW) • MW101 (4" RW) 	Drake Property

*Pump was turned off on April 30, 2015.

Additional information describing the performance of the MPE remediation systems was provided in the *Remedial Systems Operation and Maintenance (O&M) Report* prepared quarterly by HydroCon and submitted to Ecology.

6.0 GROUNDWATER MONITORING SCOPE OF WORK

The original scope of work defined in the IRAWP (SES 2011) includes the four properties located within the boundary of the TOC Site (described in **Section 2.1**), as well as a portion of the 242nd Street Southwest ROW (directly north of the TOC Site; described in **Section 2.2**). At the time the IRAWP was prepared, four monitoring wells had been decommissioned and 85 active monitoring and remediation wells were located on the TOC Site and adjacent properties. After the IRAWP was prepared, two additional monitoring wells were decommissioned (for a total of six decommissioned wells) and 20 additional wells were installed at the locations identified in the table below (for a total of 103 active monitoring and remediation wells). The 20 additional wells installed are referred to as the “post-IRAWP wells” and were incorporated into future groundwater monitoring events.

Post-IRAWP Monitoring & Remediation Wells

Property Name	Well ID			
	Installed Wells		Decommissioned Wells	
TOC	• MW90 (4" RW)	• MW91 (4" RW)	• MW21	
TOC/Farmasonis	• MW92 (4" RW) • MW93 (4" RW)	• MW94 (4" RW) • MW100	• MW83	
Drake	• MW95 (4" RW) • MW96 (4" RW)	• MW97 (4" RW) • MW98 (4" RW)	• MW99 (4" RW) • MW101 (4" RW)	None
Herman	• MW102 • MW103 • MW104	• MW105 • MW106 • MW107	• MW108 • MW109	None

⁽¹⁾ Remediation wells (identified as “RW”) are either 2 or 4 inches in diameter.

The IRAWP states the four active monitoring wells installed on the Shin/Choi Property (directly south of the Herman Property and two properties south of the TOC Site) are excluded from the scope work for the annual and quarterly groundwater monitoring events. However, for the purpose of obtaining additional information regarding contaminant distribution at the request of TOC, Stantec added these wells to the scope of work for all groundwater monitoring events. Additional details describing the annual and quarterly events are provided in the following sections.

6.1 Annual Event Scope of Work

The original scope of work defined in the IRAWP (SES 2011) for the annual event includes:

- 1) Measuring DTW/DTP levels for all active wells; and
- 2) Collecting groundwater samples from 81 active monitoring and remediation wells located on five properties (TOC, TOC/Farmasonis, Drake, 56th Avenue ROW, and 242nd Street ROW).

The original scope of work did not include monitoring of the four wells located on the Shin/Choi Property (two properties south of the TOC Site and directly south of the Herman Property). In addition to collecting DTW/DTP level measurements and groundwater samples from the wells identified in the IRAWP, the groundwater monitoring scope of work for the annual event was revised by Stantec at the request of TOC to also include the 20 post-IRAWP wells (described in **Section 6.0**), as well as the four

wells located on the Shin/Choi Property. Six of the 109 wells installed on the TOC Site and adjacent properties have been decommissioned to date. Therefore, 103 active wells are included in the groundwater monitoring scope of work for the annual event. Groundwater samples are only collected from wells that do not contain product. Since product is typically observed at MW71 and MW72 (located on the Shin/Choi Property), and MW102 (located on the Herman Property), samples are not collected from these locations. The annual event takes place during the first quarter of each year. The results of the 2016 annual event were provided in the *2016 Annual Groundwater Monitoring Report* (Stantec 2016).

6.2 Quarterly Event Scope of Work

The original scope of work defined in the IRAWP (SES 2011) for the quarterly events includes:

- 1) Collecting DTW/DTP level measurements for all active wells (excluding wells located on the Shin/Choi Property and MW75 located in the 56th Avenue ROW); and
- 2) Collecting groundwater samples from 30 active monitoring and remediation wells installed on the TOC Site.

In addition to collecting DTW/DTP level measurements and groundwater samples from the active wells identified in the IRAWP, the groundwater monitoring scope of work for the quarterly events was revised by Stantec at the request of TOC to also include:

- 1) Measuring DTW/DTP levels from the 20 post-IRAWP wells (described in **Section 6.0**), as well as the four wells located on the Shin/Choi Property; and
- 2) Sampling the four wells located on the Shin/Choi Property and select post-IRAWP wells.

Similar to the annual event, groundwater samples are only collected from wells that do not contain product; therefore, wells MW71 and MW72 (located on the Shin/Choi Property), and MW102 (located on the Herman Property) are typically not sampled. Quarterly events take place during the second, third and fourth quarters of each year. The results of the 2Q2016 quarterly event are provided herein.

The table below identifies the 30 active monitoring and remediation wells scheduled for quarterly sampling (per the requirements of the IRAWP [SES 2011]). All of the wells scheduled for quarterly sampling are located in the Intermediate Zone with the exception of MW09 and MW27, which are Shallow-Intermediate Zone Intersect Wells.

Well Locations Sampled Quarterly (per IRAWP)

Sample Location/ Well ID ⁽¹⁾	Property	Sample Location/ Well ID ⁽¹⁾	Property	Sample Location/ Well ID ⁽¹⁾	Property
MW09	TOC	MW49	56th Ave ROW	MW63	56th Ave ROW
MW10	TOC	MW50	56th Ave ROW	MW65	Drake
MW15 (4" RW)	TOC	MW51	56th Ave ROW	MW66	TOC/Farmasonis
MW20	TOC	MW52	56th Ave ROW	MW69 (2" RW)	Drake
MW27 (2" RW)	TOC	MW53	56th Ave ROW	MW70 (2" RW)	Drake
MW31 (2" RW)	TOC/Farmasonis	MW55	56th Ave ROW	MW77	Drake

Groundwater Monitoring Scope of Work
Groundwater Monitoring Report, Second Quarter 2016

Sample Location/ Well ID ⁽¹⁾	Property	Sample Location/ Well ID ⁽¹⁾	Property	Sample Location/ Well ID ⁽¹⁾	Property
MW32 (4" RW)	TOC	MW56	TOC/Farmasonis	MW84	Drake
MW33	TOC	MW58	TOC/Farmasonis	MW85	Drake
MW45	56th Ave ROW	MW59	TOC/Farmasonis	MW86	Drake
MW48	56th Ave ROW	MW60	56th Ave ROW	MW89	Drake

⁽¹⁾ Remediation wells (identified as "RW") are either 2 or 4 inches in diameter.

For the purpose of obtaining additional information regarding contaminant distribution, and at the request of TOC, select sampling locations identified in the below were added to the scope of work for quarterly groundwater monitoring events.

Additional Wells Sampled Quarterly

Shallow Zone Wells		Intermediate Zone Wells	
Well ID	Property	Well ID ⁽¹⁾	Property
MW54	TOC/Farmasonis	MW57 (4" RW)	TOC/Farmasonis
MW67	Drake	MW73	Shin/Choi
MW68	Drake	MW74	Shin/Choi
MW71*	Shin/Choi	MW95 (4" RW)**	Drake
MW72*	Shin/Choi	MW96 (4" RW)	Drake
MW102*	Herman	MW98 (4" RW)	Drake
MW104	Herman	MW101 (4" RW)	Drake
MW106	Herman	MW103	Herman
		MW105	Herman
		MW107	Herman
		MW108	Herman
		MW109	Herman

⁽¹⁾ Remediation wells are identified as "RW" and are either 2 or 4 inches in diameter.

*Sample is not collected from this location if product (LNAPL) is present.

**MW95 pump was turned off on April 30, 2015.

Based on preliminary results from the second quarter 2016 event, supplemental groundwater samples were collected by HydroCon from MW85, MW86, MW101, and MW108 on June 23, 2016. The purpose of these additional samples was to assess remediation progress near and along the border of the Drake and Herman Properties.

7.0 GROUNDWATER MONITORING FIELD METHODOLOGY

Field procedures used to conduct groundwater monitoring are summarized in the following sections.

7.1 DTW/DTP Level Measurements

During the 2Q2016 field event, DTW/DTP levels were measured while the remediation systems were turned off to obtain information on baseline (i.e., non-pumping) groundwater flow patterns. DTW/DTP levels were also measured at all well locations while the remediation systems were operating to evaluate the influence of the remediation system pumping on groundwater flow. System-on measurements were collected at the beginning of the 2Q2016 field event (on May 12, 2016). The systems were turned off on May 16, 2016, and system-off measurements were collected at the end of the 2Q2016 field event (on May 26, 2016) to allow groundwater levels to recharge.

The DTW/DTP levels were measured after removing the monitoring well caps and allowing groundwater levels to equilibrate with atmospheric pressure. The DTW/DTP levels were measured relative to the top of the well casings to an accuracy of 0.01 feet using an electronic water level meter. Where LNAPL was previously observed or expected to occur, an oil/water interface probe was used to check for the presence of LNAPL and to measure the DTW/DTP level. When more than one water level meter was selected for a field event, a baseline measurement was collected using each instrument at one well location to check for consistency between the instruments. Any differences between measurements were then used to calibrate the instruments and correct the groundwater elevations, if necessary.

DTW/DTP level measurements were collected from active monitoring and remediation wells located on the TOC Site, and adjacent properties (242nd Avenue ROW and the Herman and Shin/Choi properties). Measurements are not collected from 2-inch wells (MW27, MW29, MW31, MW41, MW69 and MW70) because the diameter of water probe is too large to fit past the pump tubing. MW75 (located in the 56th Avenue ROW) is only gauged during the annual (first quarter) event and is subject to the Traffic Control Plan (WSDOT 2014).

The DTW/DTP measurements were used to calculate groundwater elevations based on a monitoring well survey performed by PACE Engineers, Inc. (PACE) in April and May 2014. The groundwater elevations were then contoured to identify groundwater flow direction and hydraulic gradients.

DTW/DTP level measurements and resulting groundwater elevations for the 2Q2016 event are discussed in **Sections 8.1 through 8.3** and presented in **Table 1-1** for system-off conditions and **Table 1-2** for system-on conditions.

7.2 Groundwater Sample Collection

During the quarterly groundwater monitoring events, 30 active wells are scheduled for groundwater sampling (per the IRAWP). As described in **Section 6.2**, HydroCon collected groundwater samples from additional Shallow and Intermediate Zone well locations for the purpose of obtaining supplemental information regarding contaminant distribution.

Field sampling methods and procedures used to collect groundwater samples are described in the following sections. Groundwater quality results are discussed in **Section 8.4** and presented in **Tables 2-1 through 4-1**.

7.2.1 Groundwater Sampling Methods & Procedures

Groundwater sampling methods used for the quarterly events are summarized below. Methods used to collect individual samples are identified on the attached groundwater quality results tables.

- **Pneumatic Pump:** For remediation wells connected to a MPE remediation system, groundwater samples were collected using a dedicated downhole pneumatic pump. The pneumatic pump delivers a pulse of groundwater to the wellhead whenever the groundwater table rises above the pump intake. One set of field parameters (e.g., temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential) was collected from the remediation wells sampled with a pneumatic pump. Groundwater samples were collected from the pneumatic pump directly into laboratory-prepared sample containers using disposable polyethylene tubing.
- **Peristaltic Pump:** This sampling method was selected for monitoring wells installed in the Shallow and/or Shallow-Intermediate Intersect Zone with DTW levels less than 31 feet bgs (due to the inability of the pump to lift the water for sampling from greater depths). Purging and sampling with a peristaltic pump was performed using disposable polyethylene tubing at approximate flow rates of 0.1 liters per minute or less.
- **Submersible Pump:** This sampling method was selected for monitoring wells installed in the Intermediate, Deep, and/or Intermediate-Deep Intersect Zones with DTW levels greater than 31 feet bgs (in which case, a peristaltic pump could not be used for sampling). Submersible pumps were used in wells that had insufficient groundwater recharge rates and/or insufficient water column heights. Purging and sampling with a submersible pump was performed using disposable polyethylene tubing at flow rates ranging from 0.1 to 0.5 liters per minute. If the water table was above the top of the screen and, hence, the well screen was saturated, the intake tubing or the submersible pump was placed approximately in the middle of the screen. If however the groundwater table was below the top of the screen and, hence, the well screen was not fully-saturated, the intake tubing or submersible pump was placed near the middle of the water column.
- **Bailer:** The disposable polyethylene bailer sampling method was the last selected method and was only used under the following circumstances:
 - Historical analytical results indicated that elevated turbidity associated with bailing would not be likely to result in detectable concentrations of petroleum hydrocarbons in groundwater samples.
 - Historical water columns are less than five feet and recharge makes sampling with a submersible pump problematic.

Well purging and groundwater sampling with disposable bailers required the removal of at least three well volumes from each monitoring well prior to sampling. Following well purging, samples were collected from the bailer directly into laboratory-prepared sample containers. If fewer than three well

volumes were purged when attempting to collect groundwater samples, the wells were allowed to recharge for several hours (or overnight) before samples were collected.

Samples collected with a peristaltic pump, submersible pump or bailer were collected in accordance with low-flow protocols (EPA 2010). When purging and sampling in accordance with low-flow protocols, HydroCon monitored groundwater field parameters using a YSI™ or Quanta™ water quality field meter equipped with a flow-through cell (except when sampling groundwater using a bailer). Field parameters, including temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential were monitored and recorded.

Following purging and stabilization of the field parameters, groundwater samples were collected from the pump outlet tubing located upstream of the flow-through cell and placed directly into laboratory-prepared sample containers. Purge water generated during this sampling event was placed in appropriately labeled 55-gallon steel drums and temporarily stored on the TOC Property for transfer to the remediation systems for treatment and permitted discharge to the sanitary sewer.

Each set of sample containers was labeled with a unique sample identification number, placed on ice and stored inside of a cooler, and transported to the analytical laboratory under standard chain-of-custody protocols for laboratory analysis.

7.3 Laboratory Analyses

Groundwater samples were analyzed by Friedman & Bruya, Inc. (located in Seattle, Washington). The data were validated by Stantec and, in some cases, qualifiers were assigned. Results are reported between the method detection limits (MDLs) and the method reporting limits (MRLs) for all data packages. Results are typically reported as “not detected” when below the MRLs. In cases where the MRLs were not below MTCA Method A cleanup levels for groundwater, the results are reported between the MDL and MRL and are considered estimates that are used for informational purposes only. The types of analyses performed are identified in the table below.

Laboratory Analyses for Groundwater Samples

Analysis Type	Analysis Method	Sample Location / Well ID
Gasoline-Range Petroleum Hydrocarbons (GRPH)	NWTPH-Gx	<i>Analyses performed for all groundwater samples collected (as shown on Tables 2-1, 3-1 and 4-1).</i>
Oil-Range Petroleum Hydrocarbons (ORPH)	NWTPH-Dx	<i>Analyses performed for groundwater samples collected from select locations (as shown on Tables 2-1, 3-1 and 4-1).</i>
Diesel-Range Petroleum Hydrocarbons (DRPH)	NWTPH-Dx	
Benzene, Toluene, Ethylbenzene, m,p-Xylene, & o-Xylene (BTEX)	EPA Method 8021B or EPA Method 8260C	<i>Analyses performed for all groundwater samples collected (as shown on Tables 2-1, 3-1 and 4-1).</i>
Methyl Tertiary-Butyl Ether (MTBE)	EPA Method 8260C	<i>Analyses performed for groundwater samples collected from select locations (as shown on Tables 2-2 and 3-2).</i>
1,2-Dichloroethane/ Ethylene Dichloride (EDC)	EPA Method 8260C	
1,2-Dibromoethane/ Ethylene Dibromide (EDB)	EPA Method 8011M	

Analysis Type	Analysis Method	Sample Location / Well ID
Polycyclic Aromatic Hydrocarbons (PAH)	EPA Method 8270SIM	
Lead (Total & Dissolved)	EPA Method 200.8	

7.4 QA/QC Sampling Methods & Data Quality Review

The scope of work for groundwater monitoring events includes collection and laboratory analyses of groundwater samples for quality assurance/quality control (QA/QC) purposes. QA/QC samples are collected to review the accuracy and precision of field sampling procedures and data supplied by the laboratory. A summary of the QA/QC samples collected for this 2Q2016 event is provided in the following sections. Analytical results for QA/QC samples collected during this event are included in the laboratory reports provided as **Appendix A**.

7.4.1 Field Blanks

In accordance with the *Groundwater Monitoring Plan* provided as an attachment to the *Annual Groundwater Monitoring Report* (Stantec 2016), field blanks collected during each groundwater monitoring event include equipment/rinsate blanks and water blanks. Equipment/rinsate blanks consist of clean water (i.e. deionized water) that is poured through non-dedicated sampling equipment (submersible pumps) following decontamination on the field days when the non-dedicated equipment is used (normally one per day); these samples are used to assess the thoroughness of the equipment decontamination process. For this event, HydroCon collected one field equipment blank after each use and decontamination of the submersible pump for sampling. Water blanks consist of the clean water used to decontaminate the non-dedicated sampling equipment poured directly into sample containers. During this event, HydroCon collected two water blanks to evaluate water quality used for equipment decontamination. In addition, trip blanks were supplied by the laboratory and accompanied the collected groundwater samples to the laboratory. The purpose of the trip blanks was to evaluate the potential of cross-contamination between the sample containers during transport of the samples from the field to the laboratory. The sample IDs for the field blanks collected during this 2Q2016 event are listed in the table below (with the collection date in parentheses).

Field Blanks Collected During 2Q2016 Event

Sample Type	2Q2016				
Water Blank	<ul style="list-style-type: none"> ▪ WB01 (05202016) ▪ WB02 (05272016) 				
Trip Blank	<ul style="list-style-type: none"> ▪ Trip Blank (05162016) ▪ Trip Blank (05172016) ▪ TB03 (05202016) ▪ Trip Blank (05242016) 				
Equipment/Rinsate Blank	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">▪ EB01 (05202016)</td> <td style="border: none;">▪ EB89 (05242016)</td> </tr> <tr> <td style="border: none;">▪ EB107</td> <td style="border: none;">▪ EB65</td> </tr> </table>	▪ EB01 (05202016)	▪ EB89 (05242016)	▪ EB107	▪ EB65
▪ EB01 (05202016)	▪ EB89 (05242016)				
▪ EB107	▪ EB65				

	(05232016)	(05242016)
	▪ EB55	▪ EB49
	(05242016)	(05252016)
	▪ EB63	▪ EB56
	(05252016)	(05252016)
	▪ EB69	▪ <u>EB58</u>
	(05252016)	<u>(05252016)</u>
	▪ EB84	▪ <u>EB59</u>
	(05232016)	<u>(05252016)</u>
	▪ EB85	▪ <u>EB60</u>
	(05252016)	<u>(05252016)</u>

7.4.2 Blind Field Duplicate Samples

Blind field duplicate samples were collected from the locations identified in the table provided below. Duplicate samples are typically collected from two or more wells located on the TOC Site and from one well located on the Herman or Drake Property. Duplicate sample locations are selected based on locations where concentrations of the constituents analyzed are expected to be elevated. Duplicate samples are collected to evaluate accuracy and precision and determine if sample collection methods are reproducible. These samples were collected by the same method used to collect the primary sample. Analytical results are provided in the laboratory reports and presented on **Tables 2-1 through 4-1**.

Second Quarter 2016

Sample Location/Well ID	Property	Sampling Method	Sample ID	Duplicate Sample ID
MW09	TOC	Submersible Pump	MW09	MLT-01
MW20	TOC	Submersible Pump	MW20	MLT-02
MW25	TOC	Peristaltic Pump	MW25	MLT-05
MW86	Drake	Submersible Pump	MW86	MLT-03
MW28	TOC	Peristaltic Pump	MW28	MLT-04

8.0 GROUNDWATER MONITORING RESULTS

Groundwater monitoring results for the 2Q2016 quarterly groundwater monitoring event are organized by monitoring well categories based on groundwater zone and well screen intervals intersecting groundwater zones (see discussion in **Section 4.0**). As previously mentioned, the five monitoring well categories include:

1. Shallow Zone Wells,
2. Intermediate Zone Wells,
3. Deep Zone Wells,
4. Shallow-Intermediate Zone Intersect Wells, and
5. Intermediate-Deep Zone Intersect Wells.

8.1 DTW/DTP Level Measurements

A summary of information collected during each DTW/DTP level measurement event is provided in the table below. DTW/DTP level measurements collected and resulting groundwater elevations at individual well locations are presented in **Table 1-1**. Groundwater elevation results are discussed in **Section 8.2** and shown on groundwater elevation contour maps (**Figures 4 through 6**).

A summary of DTW level measurement data and a list of wells where measurable LNAPL was observed for 2Q2016 are provided in the table below. LNAPL measurements are presented in **Section 8.3**.

System-Off DTW/DTP Level Measurements

	2Q2016
Measurement Date	May 26, 2016
Total Dry Wells ⁽¹⁾	12
Total Inaccessible Wells ⁽²⁾	0
Shallowest DTW Level Measurement	9.71 feet bgs (MW61, 56 th Avenue ROW, Shallow Zone Well)
Deepest DTW Level Measurement	44.31 feet bgs (MW16, 242 nd Street ROW, Intermediate-Deep Zone Intersect Well)
Shallow Zone Wells with Measurable LNAPL	<ul style="list-style-type: none"> ▪ MW71 (Shin/Choi) ▪ MW72 (Shin/Choi) ▪ MW102 (Herman)

*MW104 (another shallow zone well on Herman Property) exhibited a sheen (but not a measureable thickness of LNAPL) during this 2Q2016 event. Historically, MW104 has contained LNAPL and/or has been dry. During the 2Q16 event, a sheen was observed and the well was sampled.

⁽¹⁾ Wells did not have sufficient groundwater volume to measure DTW/DTP levels either because the well was dry (monitoring well) or the top of the pump was encountered before groundwater (remediation wells).

⁽²⁾ Includes wells that were inaccessible due to a vehicle or construction equipment blocking the wellhead during both the system-off DTW/DTP measurement event and the groundwater sampling event.

As described in **Section 7.1**, DTW/DTP levels are not measured in 2-inch remediation wells (MW27, MW29, MW31, MW41, MW69, and MW70) because the diameter of the water probe is too large to fit past the pump tubing. In addition, DTP/DTW levels are only measured in MW75 during the annual (first quarter) event because it is located in the 56th Avenue West right-of-way and requires traffic control. DTW/DTP levels in several other wells were not measured during each quarterly field event for one of the following reasons:

1. Monitoring Wells: insufficient groundwater or the well was inaccessible (indicated as “dry” on the groundwater elevation contour maps provided as **Figures 4 through 6**).
2. Remediation Wells: the top of the remediation pump was encountered prior to groundwater and access past the pump was not possible (indicated as “dry” on the groundwater elevation contour maps).
3. Wellhead was inaccessible during the field event (indicated as “NM” on the groundwater elevation contour maps).
4. The well was not included in the scope of work for the measurement event or the diameter of the water probe was too large to fit past pump tubing in 2-inch remediation wells (indicated as “NM” on the groundwater elevation contour maps).

8.2 Groundwater Elevations

Groundwater elevations were determined for this 2Q16 event when the remediation systems were turned off in order to evaluate groundwater flow patterns during baseline (i.e., non-pumping) conditions. As previously mentioned in **Section 7.1**, groundwater elevations for system-on conditions were also collected during this event from all accessible well locations to evaluate groundwater flow patterns during active remediation conditions. A discussion of observations for this 2Q2016 quarterly event is provided below for each groundwater zone.

8.2.1 Shallow Zone

Consistent with groundwater elevation data collected during previous events, groundwater flow in the Shallow Zone during this 2Q2016 event appears to be predominantly to the south-southeast, as shown in **Figure 4**. A relatively consistent horizontal hydraulic gradient ranging from approximately 0.02 to 0.05 feet/foot during this 2Q2016 event is present across the Site and adjacent properties to the south with the maximum gradient occurring in the central/southern portion of the Site (i.e., TOC/Farmasonis and Drake Properties). Steepening of gradients observed during previous events in the southern portion of the TOC Site were not observed during 2Q16, possibly related to seasonal variability in precipitation and infiltration rates. As discussed in **Section 4.1**, steepening of gradients observed during previous events could be related to increased infiltration in this area through emplaced fill from the UST excavation or from the former topographically closed depression, where surface runoff previously ponded, and the former stormwater infiltration pit.

8.2.2 Intermediate Zone

Similar to the Shallow Zone, groundwater flow in the Intermediate Zone during baseline (system-off/non-pumping) conditions appears to be generally to the south-southeast based on previous groundwater elevations and those measured during this 2Q2016 field event, as shown in **Figure 5a**. Horizontal

hydraulic gradients ranging from approximately 0.03 to 0.4 feet/feet occur across the TOC Site. As discussed in **Section 4.2**, steepening in the slope of the horizontal gradient is apparent in the vicinity of the TOC Property's southern boundary and is thought to be related to mounding of groundwater in the area of the TOC Property. This mounding could reflect the combined influences of the following: artificial recharge associated with emplaced fill in the former UST area and the stormwater infiltration pit and depression and/or the apparent presence of low permeability material restricting groundwater flow in that area. As groundwater moves downgradient and encounters higher permeability layers (e.g., gravels and sands), the horizontal hydraulic gradient flattens significantly.

Groundwater elevations based on DTW data collected while the remediation systems were operating are shown in **Figure 5b**. Comparison of these data with the system-off data indicate that hydraulic control is effectively being achieved on the TOC Property and the north and central portions of the TOC/Farmasonis Property, but is not as apparent on the southern part of the TOC/Farmasonis Property and the Drake Property. **Figure 5c and Table 1-3** show the difference between the system-on and system-off groundwater elevations with positive values showing hydraulic influence and negative values indicating that the system-off elevations are lower than the system-on data and therefore, groundwater elevations are not influenced by the remediation systems.

8.2.3 Deep Zone

Groundwater flow in the Deep Zone appears to be generally to the southeast. The horizontal hydraulic gradient has a relatively flat range from approximately 0.006 to 0.011 feet/feet during this 2Q2016 quarterly event (likely because the wells are screened in high permeability material). Groundwater elevations for the monitoring wells located in the Deep Zone are shown in **Figure 6**.

8.2.4 Well Screens Intersecting Multiple Zones

As previously mentioned, the well screens in 16 monitoring and remediation wells appear to intersect conditions of multiple groundwater zones. Since the groundwater level elevations for these wells do not correlate with a single groundwater zone, they appear anomalous when included with groundwater elevations representing a single groundwater zone, and therefore, were not used for groundwater elevation contouring. Data for these wells are shown on the Intermediate Zone contour maps identified in **Section 8.2.2**. The groundwater elevation data collected from the wells intersecting two groundwater zones are described below.

8.2.4.1 Shallow-Intermediate Zone Intersect Wells

Fifteen monitoring and remediation wells appear to have screened intervals that intersect both Shallow and Intermediate Zone conditions (MW08, MW09, MW18, MW22, MW24, MW27, MW28, MW29, MW37, MW38, MW43, MW82, MW83, MW88 and MW100). Groundwater elevations for these wells are typically lower than Shallow Zone wells, but higher than Intermediate Zone wells due to influence of groundwater conditions from both the Shallow and Intermediate Zones.

8.2.4.2 Intermediate-Deep Zone Intersect Wells

One monitoring well (MW16) appears to have a screened interval that intersects both Intermediate and Deep Zone conditions. The well has been dry during many sampling events but during the 2Q2016 had

an approximate 3.4-foot water column. When measured, the groundwater elevations are typically lower than other Intermediate Zone wells due to influence from the Deep Zone.

8.3 LNAPL Measurements

A sheen was observed in one Shallow Zone well (MW104) on the Herman Property, and measurable LNAPL was observed in the three Shallow Zone monitoring wells identified below on the Shin/Choi and Herman Properties during this 2Q2016 quarterly event, consistent with previous events. The table below provides LNAPL thicknesses measured at these locations.

Measurable LNAPL in Shallow Zone Wells during Second Quarter 2016 Quarterly Event

Location/Well ID	Property	LNAPL Thickness in feet
MW71	Shin/Choi	2.31
MW72	Shin/Choi	0.72
MW102	Herman	2.86

8.4 Groundwater Quality Results

Analytical results for this 2Q2016 event are provided on **Tables 2-1 through 4-1**. The types of laboratory analyses performed by Friedman & Bruya for the groundwater samples collected are described in **Section 7.3**, and analytical reports for this quarterly event are provided in **Appendix A**. As shown on the attached tables, the analytical results indicate several constituents were consistently detected in groundwater samples at concentrations above the MRLs (i.e., detected concentrations) and above MTCA Method A cleanup levels.

A summary of the analytical results that exceed the MTCA Method A cleanup levels for each well network are presented in the following sections. A summary of the results for this 2Q2016 event is provided in **Section 9.1**, followed by a list of conclusions in **Section 9.2**.

8.4.1 Shallow Zone

The Shallow Zone well network includes 20 active monitoring wells and one decommissioned well. The scope of work defined in the IRAWP does not require quarterly groundwater sampling of any of the wells in this zone. As previously discussed, HydroCon collected samples from select Shallow Zone wells for the purpose of obtaining additional information regarding contaminant distribution. Additional sampling locations are described in **Section 6.2**.

The table below identifies sample concentrations that meet or exceed MTCA Method A cleanup levels during the 2Q2016 event. **Tables 2-1 and 2-2** summarize the analytical results for the groundwater samples collected from Shallow Zone wells. Distribution maps for GRPH and benzene concentrations in the Shallow Zone are provided as **Figures 7 and 8** for this event.

2Q2016 Analytical Results for Groundwater Samples Exceeding Cleanup Levels (Shallow Zone Wells)

Analyte	MTCA Method A Cleanup Level (µg/L)	Sample Location/ Well ID	Property	Analytical Results (µg/L)
GRPH	800 when benzene is present	MW71	Shin/Choi	LNAPL ⁽¹⁾
		MW72	Shin/Choi	LNAPL ⁽¹⁾
		MW102	Herman	LNAPL ⁽¹⁾
		MW104*	Herman	9,300
DRPH ^(a)	500	MW104*	Herman	4,700
Benzene	5	MW71	Shin/Choi	LNAPL ⁽¹⁾
		MW72	Shin/Choi	LNAPL ⁽¹⁾
		MW102	Herman	LNAPL ⁽¹⁾
Naphthalene	160	MW104*	Herman	270

*Sheen was detected at MW104 and the well was sampled by HydroCon.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Qualifier was assigned based on data validation protocol.

^(a) The sample chromatographic pattern does not resemble the diesel extended analysis standard used for quantitation.

⁽¹⁾ Samples were not collected from well location due to presence of product (LNAPL). Exceedance of MTCA cleanup levels is expected due to the presence of LNAPL.

8.4.2 Intermediate Zone

At the time of the 2Q2016 event, the Intermediate Zone well network included 62 active wells (18 of which serve as remediation wells) and four decommissioned wells. As indicated in **Section 5.0**, the pump in remediation well MW95 was turned off on April 30, 2015 (prior to 2Q2015), reducing the number of active remediation wells to 17. As previously mentioned, the pump was turned on for one day at the time of sampling during the quarterly field event. The scope of work defined in the IRAWP requires quarterly groundwater sampling of 28 of the 62 active wells in this zone. As previously discussed, in addition to sampling the required wells, HydroCon also sampled several other select Intermediate Zone wells for the purpose of obtaining additional information regarding contaminant distribution. Additional sampling locations are described in **Section 6.2**.

The table below identifies sample concentrations that meet or exceed MTCA Method A cleanup levels during the quarterly event. **Tables 3-1 and 3-2** summarize the analytical results for the groundwater samples collected from Intermediate Zone wells. Distribution maps for GRPH and benzene concentrations in the Intermediate Zone are provided as **Figures 9 and 10** for this 2Q2016 event.

2Q2016 Analytical Results for Groundwater Samples Exceeding Cleanup Levels (Intermediate Zone)

Analyte	MTCA Method A Cleanup Level (µg/L)	Sample Location/ Well ID ⁽¹⁾	Property	Analytical Results (µg/L)
GRPH	800 when benzene is present	MW48	56th Ave ROW	4,800
		MW69 (2" RW)	Drake	3,300
		MW73	Shin/Choi	67,000
		MW74	Shin/Choi	100,000
		MW90	TOC	4,600
		MW108	Herman	1,600/3,200*

Analyte	MTCA Method A Cleanup Level (µg/L)	Sample Location/ Well ID ⁽¹⁾	Property	Analytical Results (µg/L)
DRPH (a)	500	MW69 (2" RW)	Drake	1,100
		MW70	Drake	540
		MW73	Shin/Choi	3,300
		MW74	Shin/Choi	5,400
		MW103	Herman	860
		MW108	Herman	650*
Benzene	5	MW73	Shin/Choi	12,000
		MW74	Shin/Choi	19,000
		MW103	Herman	320
Toluene	1,000	MW73	Shin/Choi	4,000
		MW74	Shin/Choi	18,000
Ethylbenzene	700	MW73	Shin/Choi	2,300
		MW74	Shin/Choi	1,800
MTBE	20	MW74	Shin/Choi	420
		MW103	Herman	380
EDB	0.01	MW73	Shin/Choi	0.2
		MW74	Shin/Choi	2.4
		MW103	Herman	0.028
Total Lead	15	MW90	TOC	21.4
Naphthalene	160	MW73	Shin/Choi	250
		MW74	Shin/Choi	220

^(a) The sample chromatographic pattern does not resemble the diesel extended analysis standard used for quantitation.

⁽¹⁾ Remediation wells are identified as "RW" and are either 2 or 4 inches in diameter.

⁽²⁾ Historically, MW74 has been dry or has contained product at this location.

*Indicates sample collected during a supplemental event on June 23, 2016 from this location.

8.4.3 Deep Zone

The Deep Zone well network includes six active monitoring wells. The scope of work defined in the IRAWP does not require quarterly groundwater sampling of any of the active wells installed in this zone.

8.4.4 Well Screens Intersecting Multiple Zones

As described in **Section 4.4**, 15 active wells (four of which serve as remediation wells) and one decommissioned well appear to have wells screens that intersect conditions of multiple groundwater zones. The groundwater quality results for monitoring wells in these zones are discussed in the following sections. GRPH and benzene concentrations in wells that intersect multiple groundwater zones are shown on the Intermediate Zone distribution maps provided as **Figures 9 and 10** for this 2Q2016 event.

8.4.4.1 Shallow-Intermediate Zone Intersect Wells

The Shallow-Intermediate Zone intersect well network includes 14 active wells (four of which serve as remediation wells) and one decommissioned well. The scope of work defined in the IRAWP requires quarterly groundwater sampling of two (MW09 and MW27) of the 14 active wells in this zone; however, four select wells (MW22, MW24, MW28, and MW29) were also sampled by HydroCon for the purpose of obtaining additional information regarding contaminant distribution. As shown in **Table 4-1**, the analytical results of the samples collected did not exceed MTCA Method A cleanup levels for 2Q2016.

Because MTBE, EDC, EDB, and PAHs were not analyzed for any of these samples, a groundwater quality results table for common fuel additives is not provided for this zone. Total and dissolved leads were analyzed for MW29 during 2Q2016 and both constituents were non-detect at less than 1 micrograms per Liter (ug/L).

8.4.4.2 Intermediate-Deep Zone Intersect Wells

The scope of work defined in the IRAWP does not require quarterly groundwater monitoring for the one monitoring well (MW16 located within the 242nd Street ROW) that intersects Intermediate and Deep Zone conditions. Groundwater sampling for MW16 is performed during the annual (first quarter) event.

8.5 QA/QC & Data Quality Results

As described in **Section 6.0**, the scope of work for the quarterly groundwater monitoring events included collection and laboratory analyses of groundwater samples for QA/QC purposes. Stantec performed a QA/QC (data validation) review of the analytical results, which included a review of accuracy and precision of data supplied by the laboratory per EPA guidelines. The data validation resulted in assignment of qualifiers to several sample results. Analytical results for field duplicates and method duplicates and data validation qualifiers are provided on the attached groundwater quality results tables. Analytical results for all other QA/QC samples, including water blanks, trip blanks, and equipment/rinsate blanks are provided in the laboratory reports provided as **Appendix A**.

9.0 SUMMARY OF RESULTS & CONCLUSIONS

A summary of the results and a list of conclusions for this 2Q2016 quarterly groundwater monitoring event are provided in **Sections 9.1 and 9.2**, respectively.

9.1 Summary of 2Q2016 Results

9.1.1 DTW/DTP Level Measurements

- DTW level measurements ranged from 9.71 feet bgs for MW61 (a Shallow Zone well located within the 56th Avenue ROW) to 44.31 feet bgs for MW16 (an Intermediate-Deep Zone Intersect well located within the 242nd Street ROW).
- Measurable LNAPL was observed in three Shallow Zone monitoring wells (MW71 and MW72 located on the Shin/Choi Property and MW102 located on the Herman Property). A sheen (but not a measureable product thickness) was detected at MW104 on the Herman Property.
- Comparison of system-on and system-off groundwater elevations indicate that the remediation systems on the TOC Property (Unit 1) and the TOC/Farmasonis Property (Unit 2) are providing effective hydraulic control, but to a lesser extent on the Drake Property (Unit 3).

9.1.2 Groundwater Quality

- **Shallow Zone:** Concentrations did not exceed MTCA Method A cleanup levels in groundwater samples collected from the TOC Site. Locations of groundwater samples that exceeded MTCA cleanup levels during 2Q2016 are described below. Samples were not collected from MW71 and MW72 (located on the Shin/Choi Property) due to the presence of product in the wells.
 - As shown in **Figures 7 and 8**, GRPH and benzene concentration exceeding MTCA A cleanup levels were observed near the northern boundary of the Herman Property at MW104. Because LNAPL was observed in MW102 on the Herman Property and MW71 and MW72 on the Shin/Choi Property, additional GRPH and benzene plume areas were added to include these three locations.
 - In addition, DRPH and one PAH (naphthalene) exceeded MTCA A cleanup levels in the groundwater sample collected from MW104.
- **Intermediate Zone:** Concentrations exceeding MTCA Method A cleanup levels were detected in groundwater samples collected from the Intermediate Zone wells as described below.
 - As shown in **Figures 9 and 10**, concentrations of GRPH and/or benzene exceeding MTCA cleanup levels were focused in the following areas:
 - MW48 – 56th Avenue ROW: located on the east side of the ROW, adjacent to the property line shared by the TOC/Farmasonis and Drake Properties;
 - MW69 – Drake Property: located in the southwest portion of the property;
 - MW73 – Shin/Choi Property: located in the southwest portion of the property in the vicinity of the historic excavation area;

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- MW74 – Shin/Choi Property: located in the northern portion of the property adjacent to the Herman Property;
 - MW90 – TOC Property; located in the northwest portion of the property where the USTs were formerly located; and
 - MW108 – Herman Property; located in the northeast portion of the property close to the border with the adjacent Drake Property.
- Concentrations of other constituents exceeding MTCA cleanup levels were focused in the following areas:
 - MW90 – TOC Property: The concentration of total lead exceeded the cleanup level in the northwest portion of the property.
 - MW69 and MW70 – Drake Property: Concentrations of DRPH exceeded cleanup levels in groundwater samples from both wells.
 - MW73 and MW74 – Shin/Choi Property: Concentrations of DRPH, toluene, ethylbenzene, MTBE, EDB, and one PAH (naphthalene) exceeded cleanup levels in groundwater samples collected from at least one of these wells.
 - MW103 – Herman Property: Concentrations of DRPH, MTBE, and EDB exceeded cleanup levels in the southwest area of the property, downgradient from the historic UST excavation area.
 - MW108 – Herman Property: the concentration of DRPH exceeded the cleanup level in the northeast portion of the property, near the border with the adjacent Drake Property.
 - **Deep Zone:** Groundwater samples were not collected from wells located in the Deep Zone during this quarterly event (per the scope of work defined in the IRAWP).
 - **Shallow-Intermediate Zone Intersect Wells:** Concentrations of samples collected from Shallow-Intermediate Zone Intersect wells during this quarterly event did not exceed MTCA cleanup levels.
 - **Intermediate-Deep Zone Intersect Wells:** Groundwater samples were not collected from the well located in the Intermediate-Deep Zone during this quarterly event (per the scope of work defined in the IRAWP).

9.2 Conclusions

A list of conclusions based on the results from this 2Q2016 quarterly event is provided below:

- The overall direction of groundwater flow through the Shallow, Intermediate, and Deep Zones is toward the south-southeast, consistent with data from prior events.
- Shallow Zone groundwater impacts from petroleum hydrocarbons are not currently observed at the TOC Site. Impacts to Shallow Zone groundwater exceeding MTCA Method A cleanup levels were limited to the Herman and Shin/Choi Properties during the reporting period.
- LNAPL has been consistently observed in Shallow Zone wells on the Shin/Choi Property and typically in the southernmost Shallow Zone well on the Herman Property (adjacent to the

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Shin/Choi Property line). Based on historical information (presented in the Stantec 2014, 2015, and 2016 Annual Groundwater Monitoring Reports), and the lack of current and historical measurable LNAPL in the Shallow Zone wells on the Drake Property (located directly upgradient of the wells containing LNAPL), the source of the free product in MW71, MW72 and MW102 appears to be different than that of the TOC Property and may originate from USTs historically or currently located on the Herman and Shin/Choi Properties.

- Intermediate Zone groundwater impacts from petroleum hydrocarbons on the TOC Site are isolated to the 56th Avenue ROW in the area adjacent to the Drake and TOC/Farmasonis property line and north of the shared Drake and Herman Property line. Additional impacts from petroleum hydrocarbons in the Intermediate Zone are observed on the Shin/Choi Property in the area adjacent to the Herman Property line and in the area of the historic UST excavation. Based on the current and historical concentration distribution patterns and comparison of contaminant concentrations on the TOC Site with those in the southernmost plume area (located on the Shin/Choi Property), the Intermediate Zone impacts on the TOC Site appear to be separate from those on the Shin/Choi Property.
- For the first time since well installation in June 2015, MW108, located at the northern portion of the Herman Property, contained a GRPH concentration (1,600 µg/L) exceeding the MTCA Method A cleanup level during the 2Q16 event and during the supplemental event in June 2016 (3,200 µg/L). Comparison of the concentrations just north of the Drake-Herman property boundaries indicates significantly lower GRPH concentrations currently and historically than at MW108. Therefore, the impacts at MW108 do not appear to be related to impacts on the TOC Site. The increase in GRPH concentrations at this location could be related to recent exposure of petroleum-impacted soil on the east side of the Herman Property during construction activities on Mountlake Senior Property and subsequent increased infiltration and downward migration to the intermediate zone through the exposed soil.
- Only minor GRPH impacts to groundwater from petroleum hydrocarbons (less than cleanup levels) were observed in three (3) Shallow-Intermediate Zone Intersect wells (MW24, MW27, and MW29) sampled during this 2Q2016 quarterly event. Since impacts to groundwater are no longer observed in Deep Zone and Intermediate-Deep Zone Intersect wells, quarterly groundwater sampling is not required. Groundwater samples are only collected from these zones during the annual (first quarter) event (per the scope of work defined in the IRAWP).
- The current vertical and lateral distributions of petroleum hydrocarbons in the three groundwater zones support the working hypothesis that contamination originating from the former USTs on the TOC Property has been mostly remediated with limited petroleum-impacted groundwater remaining within the Intermediate Zone on the TOC, TOC/Farmasonis and Drake Properties.

10.0 FUTURE GROUNDWATER TASKS

The 2Q2016 groundwater monitoring event was performed by HydroCon from May 12 through 26, 2016, with the results documented herein. The table below identifies the month during which the remaining two 2016 quarterly groundwater monitoring events will take place. Reports for quarterly groundwater monitoring events will be submitted by the end of the following quarter.

2016 Quarterly Groundwater Monitoring Event Schedule

Quarter	Field Event Dates
3Q2016	August 2016
4Q2016	November 2016

11.0 REFERENCES

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TABLES

- 1-1 Depth-to-Groundwater Level & Product Thickness Measurements (System Off)
- 1-2 Depth-to-Groundwater Level & Product Thickness Measurements (System On)
- 1-3 Comparison of System-On and System-Off Groundwater Elevations, May 2016
- 2-1 Groundwater Quality Results for Select Constituents, Shallow Zone Wells
- 2-2 Groundwater Quality Results for Common Fuel Additives, Shallow Zone Wells
- 3-1 Groundwater Quality Results for Select Constituents, Intermediate Zone Wells
- 3-2 Groundwater Quality Results for Common Fuel Additives, Intermediate Zone Wells
- 4-1 Groundwater Quality Results for Select Constituents, Shallow-Intermediate Zone Intersect Wells

TABLE 1-1
Depth-to-Groundwater Level and Product Thickness Measurements (System Off)
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, Washington

Well Identifier (a)	Property	Groundwater Zone	Date	Time (24:00)	Reference Elevation (feet) (b)	DTW (feet) (c)	Groundwater Elevation (feet) (d, e)	Product (LNAPL) Thickness (feet)	Notes / Observations
MW01	TOC	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 10/02/2009
MW02	TOC	Shallow	05/26/2016	13:59	358.71	10.56	348.15	--	
MW03	TOC	Shallow	05/26/2016	15:09	361.85	12.07	349.78	--	
MW04	56th Ave ROW	Shallow	05/26/2016	14:15	361.96	10.64	351.32	--	
MW05	242nd St ROW	Shallow	05/26/2016	14:15	363.70	10.72	352.98	--	
MW06	TOC	Shallow	05/26/2016	13:47	358.98	12.38	346.60	--	
MW07	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW08	56th Ave ROW	Shallow-Intermediate	05/26/2016	14:19	360.34	20.55	339.79	--	
MW09	TOC	Shallow-Intermediate	05/26/2016	14:05	360.32	25.33	334.99	--	
MW10	TOC	Intermediate	05/26/2016	13:55	357.91	28.09	329.82	--	
MW11 (4" RW)	TOC	Intermediate	05/26/2016	14:11	362.34	23.89	338.45	--	
MW12	56th Ave ROW	Shallow	05/26/2016	14:53	357.65	9.76	347.89	--	
MW13	56th Ave ROW	Intermediate	05/26/2016	14:51	357.34	40.31	317.03	--	
MW14	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW15	TOC	Intermediate	05/26/2016	13:39	357.56	31.43	326.13	--	
MW16	242nd St ROW	Intermediate-Deep	05/26/2016	14:13	365.18	44.31	320.87	--	
MW17	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW18 (4" RW)	TOC	Shallow-Intermediate	05/26/2016	13:49	357.91	NM	NM	NM	
MW19	TOC	Shallow	05/26/2016	13:53	358.86	12.55	346.31	--	
MW20	TOC	Intermediate	05/26/2016	14:01	359.93	30.04	329.89	--	
MW21	TOC	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 04/16/2012
MW22	TOC	Shallow-Intermediate	05/26/2016	13:53	358.52	28.61	329.91	--	
MW23	TOC	Intermediate	05/26/2016	13:37	357.08	39.10	317.98	--	
MW24 (4" RW)	TOC	Shallow-Intermediate	05/26/2016	14:07	361.97	21.93	340.04	--	
MW25	TOC	Intermediate	05/26/2016	13:57	358.70	26.76	331.94	--	
MW26	TOC	Deep	05/26/2016	14:17	363.81	43.91	319.90	--	
MW27 (2" RW)	TOC	Shallow-Intermediate	05/26/2016	NM	362.51	NM	NM	NM	
MW28	TOC	Shallow-Intermediate	05/26/2016	14:51	358.41	27.02	331.39	--	
MW29 (2" RW)	TOC	Shallow-Intermediate	05/26/2016	NM	358.93	NM	NM	NM	
MW30	TOC/Farmasonis	Deep	05/26/2016	13:35	356.46	37.82	318.64	--	
MW31 (2" RW)	TOC/Farmasonis	Intermediate	05/26/2016	NM	357.08	NM	NM	NM	
MW32 (4" RW)	TOC	Intermediate	05/26/2016	14:03	359.95	23.16	336.79	--	
MW33	TOC	Intermediate	05/26/2016	13:51	358.24	34.32	323.92	--	
MW34	TOC	Shallow	05/26/2016	13:41	357.88	11.57	346.31	--	
MW35	TOC	Intermediate	05/26/2016	13:43	358.46	39.64	318.82	--	
MW36	TOC	Intermediate	05/26/2016	13:45	357.98	40.93	317.05	--	
MW37	TOC	Shallow-Intermediate	05/26/2016	13:49	358.90	20.50	338.40	--	
MW38	TOC	Shallow-Intermediate	05/26/2016	14:19	364.42	18.22	346.20	--	
MW39	TOC/Farmasonis	Deep	05/26/2016	16:00	355.88	37.92	317.96	--	
MW40	TOC/Farmasonis	Deep	05/26/2016	14:49	356.32	37.84	318.48	--	
MW41 (2" RW)	TOC/Farmasonis	Intermediate	05/26/2016	NM	356.14	NM	NM	NM	
MW42	TOC/Farmasonis	Intermediate	05/26/2016	15:04	356.43	39.68	316.75	--	
MW43	56th Ave ROW	Shallow-Intermediate	05/26/2016	14:26	358.84	34.41	324.43	--	
MW44	56th Ave ROW	Intermediate	05/26/2016	14:32	354.93	DRY	DRY	DRY	
MW45	56th Ave ROW	Intermediate	05/26/2016	14:49	356.49	38.62	317.87	--	
MW46	56th Ave ROW	Intermediate	05/26/2016	14:30	357.00	39.96	317.04	--	
MW47	56th Ave ROW	Intermediate	05/26/2016	16:44	355.47	39.34	316.13	--	
MW48	56th Ave ROW	Intermediate	05/26/2016	14:38	355.41	39.81	315.60	--	
MW49	56th Ave ROW	Intermediate	05/26/2016	14:44	356.44	40.04	316.40	--	
MW50	56th Ave ROW	Intermediate	05/26/2016	14:19	361.99	33.49	328.50	--	
MW51	56th Ave ROW	Intermediate	05/26/2016	15:42	352.66	38.05	314.61	--	
MW52	56th Ave ROW	Intermediate	05/26/2016	14:40	355.61	40.01	315.60	--	
MW53	56th Ave ROW	Intermediate	05/26/2016	14:24	359.85	39.99	319.86	--	
MW54	TOC/Farmasonis	Shallow	05/26/2016	14:47	357.93	10.59	347.34	--	
MW55	56th Ave ROW	Intermediate	05/26/2016	14:32	356.50	39.99	316.51	--	
MW56	TOC/Farmasonis	Intermediate	05/26/2016	14:49	357.49	40.85	316.64	--	
MW57 (4" RW)	TOC/Farmasonis	Intermediate	05/26/2016	15:05	356.42	40.50	315.92	--	
MW58	TOC/Farmasonis	Intermediate	05/26/2016	15:02	355.40	39.78	315.62	--	
MW59	TOC/Farmasonis	Intermediate	05/26/2016	14:52	356.51	39.92	316.59	--	
MW60	56th Ave ROW	Intermediate	05/26/2016	14:26	358.58	40.57	318.01	--	
MW61	56th Ave ROW	Shallow	05/26/2016	14:28	357.17	9.71	347.46	--	
MW62	56th Ave ROW	Shallow	05/26/2016	14:22	360.50	11.02	349.48	--	
MW63	56th Ave ROW	Intermediate	05/26/2016	14:38	355.11	39.41	315.70	--	
MW64	56th Ave ROW	Deep	05/26/2016	14:40	355.18	37.15	318.03	--	
MW65	Drake	Intermediate	05/26/2016	15:23	353.08	38.29	314.79	--	
MW66	TOC/Farmasonis	Intermediate	05/26/2016	15:49	355.75	39.23	316.52	--	
MW67	Drake	Shallow	05/26/2016	15:19	355.73	11.87	343.86	--	
MW68	Drake	Shallow	05/26/2016	15:21	355.11	11.73	343.38	--	

TABLE 1-1
Depth-to-Groundwater Level and Product Thickness Measurements (System Off)
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, Washington

Well Identifier (a)	Property	Groundwater Zone	Date	Time (24:00)	Reference Elevation (feet) (b)	DTW (feet) (c)	Groundwater Elevation (feet) (d, e)	Product (LNAPL) Thickness (feet)	Notes / Observations
MW69 (2" RW)	Drake	Intermediate	05/26/2016	NM	353.76	NM	NM	NM	Inaccessible due to vehicle
MW70 (2" RW)	Drake	Intermediate	05/26/2016	NM	354.17	NM	NM	NM	Inaccessible due to vehicle
MW71	Shin/Choi	Shallow	05/26/2016	NM	347.92	NM	NM	NM	Product in well
MW72	Shin/Choi	Shallow	05/26/2016	NM	347.38	NM	NM	NM	Product in well
MW73	Shin/Choi	Intermediate	05/26/2016	15:25	347.33	35.14	312.19	--	
MW74	Shin/Choi	Intermediate	05/26/2016	15:23	347.94	35.19	312.75	--	
MW75	56th Ave ROW	Intermediate	05/26/2016	NM	NM	NM	NM	NM	Well is only measured during annual (first quarter) event and is subject to Traffic Control Plan (WSDOT 2014).
MW76	Drake	Intermediate	05/26/2016	15:30	351.69	36.47	315.22	--	
MW77	Drake	Intermediate	05/26/2016	14:49	349.95	35.54	314.41	--	
MW78	Drake	Deep	05/26/2016	14:51	349.90	33.91	315.99	--	
MW79	TOC/Farmasonis	Shallow	05/26/2016	15:52	353.98	13.19	340.79	--	
MW80	TOC/Farmasonis	Shallow	05/26/2016	15:50	353.83	14.22	339.61	--	
MW81	TOC/Farmasonis	Intermediate	05/26/2016	13:55	355.60	39.53	316.07	--	
MW82	TOC/Farmasonis	Shallow-Intermediate	05/26/2016	15:51	355.59	28.83	326.76	--	
MW83	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/21/2011 (REPLACED WITH MW100)
MW84	Drake	Intermediate	05/26/2016	NM	NM	NM	NM	NM	Inaccessible due to vehicle
MW85	Drake	Intermediate	05/26/2016	15:22	351.28	36.74	314.54	--	
MW86	Drake	Intermediate	05/26/2016	15:20	352.72	38.18	314.54	--	
MW87	Drake	Intermediate	05/26/2016	15:24	349.72	35.56	314.16	--	
MW88	Drake	Shallow-Intermediate	05/26/2016	15:32	351.63	16.62	335.01	--	
MW89	Drake	Intermediate	05/26/2016	16:04	353.86	38.89	314.97	--	
MW90 (4" RW)	TOC	Intermediate	05/26/2016	14:15	362.87	27.29	335.58	--	
MW91 (4" RW)	TOC	Intermediate	05/26/2016	14:13	362.67	24.84	337.83	--	
MW92 (4" RW)	TOC/Farmasonis	Intermediate	05/26/2016	16:03	357.91	41.15	316.76	--	
MW93 (4" RW)	TOC/Farmasonis	Intermediate	05/26/2016	14:45	355.97	39.33	316.64	--	
MW94 (4" RW)	TOC/Farmasonis	Intermediate	05/26/2016	14:45	357.94	DRY	DRY	DRY	
MW95 (4" RW)	Drake	Intermediate	05/26/2016	15:14	354.67	39.21	315.46	--	
MW96 (4" RW)	Drake	Intermediate	05/26/2016	15:12	356.00	40.04	315.96	--	
MW97 (4" RW)	Drake	Intermediate	05/26/2016	15:16	354.29	38.92	315.37	--	
MW98 (4" RW)	Drake	Intermediate	05/26/2016	NM	NM	NM	NM	--	Inaccessible due to vehicle
MW99 (4" RW)	Drake	Intermediate	05/26/2016	NM	353.58	NM	NM	NM	Inaccessible due to vehicle
MW100	TOC/Farmasonis	Shallow-Intermediate	05/26/2016	15:46	355.75	17.14	338.61	--	
MW101 (4" RW)	Drake	Intermediate	05/26/2016	15:18	352.05	37.39	314.66	--	
MW102	Herman	Shallow	05/26/2016	NM	352.39	NM	NM	NM	Product in well
MW103	Herman	Intermediate	05/26/2016	16:09	352.21	39.29	312.92	--	
MW104	Herman	Shallow	05/26/2016	15:38	353.00	12.29	340.71	NM	Sheen
MW105	Herman	Intermediate	05/26/2016	15:40	353.05	38.85	314.20	--	
MW106	Herman	Shallow	05/26/2016	15:34	349.24	13.82	335.42	--	
MW107	Herman	Intermediate	05/26/2016	15:36	349.56	36.08	313.48	--	
MW108	Herman	Intermediate	05/26/2016	16:07	351.09	36.67	314.42	--	
MW109	Herman	Intermediate	05/26/2016	15:38	353.35	39.32	314.03	--	

Notes:

- (a) Remediation wells (identified as "RW") are 2 or 4 inches in diameter and are connected to a multi-phase extraction system. Measurements are not collected from 2" RWs because the diameter of the water probe is too large to fit past pump tubing.
- (b) Reference elevation is the north side of the top of the well casing (except for MW25 where the reference elevation is the high point on the PVC casing and for MW99 where the reference elevation is the top of the well cap). Elevations are measured in feet above mean sea level (North American Vertical Datum of 1988 [NAVD 88]). PACE Engineers, Inc. performed well location and elevation surveys for all active wells in April and May 2014.
- (c) DTW/DTP was measured from surveyed reference elevation [see note (b)].
- (d) Where product (LNAPL) thickness was measured, groundwater elevation was adjusted to account for the presence of LNAPL using the method from "Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Wells" (Lenhard & Parker 1990). Product thickness is calculated using DTP level measured concurrently with DTW level.
- (e) Groundwater elevation represents "system off" data (i.e., natural site conditions).

Definitions:

- = No measurable product or odor observed.
- DRY = Unable to measure DTW due to insufficient groundwater (in monitoring well) or groundwater level was below the top of pump (in remediation well).
- Trace = Observed <0.01 feet of LNAPL.
- Sheen = Iridescence on surface of groundwater that is indicative of LNAPL.

Acronyms:

- DTP = depth-to-product
- DTW = depth-to-groundwater
- LNAPL = liquid non-aqueous phase liquid
- NA = not available
- NM = not measured
- RW = remediation well

List of Properties:

- TOC = 24205 56th Avenue West, Mountlake Terrace WA
- TOC/Farmasonis = 24225 56th Avenue West, Mountlake Terrace WA
- Drake = 24309 56th Avenue West, Mountlake Terrace WA
- Herman = 24311 56th Avenue West, Mountlake Terrace WA
- Shin/Choi = 24325 56th Avenue West, Mountlake Terrace WA
- 56th Ave ROW = right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties
- 242nd St ROW = portion of right-of-way adjacent to TOC Property

TABLE 1-2
Depth-to-Groundwater Level and Product Thickness Measurements (System On)
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, Washington

Well Identifier (a)	Property	Groundwater Zone	Date	Time (24:00)	Reference Elevation (feet) (b)	DTW (feet) (c)	Groundwater Elevation (feet) (d, e)	Product (LNAPL) Thickness (feet)	Notes / Observations
MW01	TOC	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 10/02/2009
MW02	TOC	Shallow	5/12/2016	13:36	358.71	10.12	348.59	--	
MW03	TOC	Shallow	5/12/2016	13:26	361.85	12.19	349.66	--	
MW04	56th Ave ROW	Shallow	5/12/2016	13:28	361.96	10.37	351.59	--	
MW05	242nd St ROW	Shallow	5/12/2016	13:16	363.70	10.24	353.46	--	
MW06	TOC	Shallow	5/12/2016	13:10	358.98	11.84	347.14	--	
MW07	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW08	56th Ave ROW	Shallow-Intermediate	5/12/2016	15:47	360.34	24.86	335.48	--	
MW09	TOC	Shallow-Intermediate	5/12/2016	13:32	360.32	28.70	331.62	--	
MW10	TOC	Intermediate	5/12/2016	13:42	357.91	33.53	324.38	--	
MW11 (4" RW)	TOC	Intermediate	5/12/2016	13:24	362.34	30.10	332.24	--	
MW12	56th Ave ROW	Shallow	5/12/2016	13:58	357.65	9.09	348.56	--	
MW13	56th Ave ROW	Intermediate	5/12/2016	14:00	357.34	40.65	316.69	--	
MW14	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW15	TOC	Intermediate	5/12/2016	13:04	357.56	39.75	317.81	--	
MW16	242nd St ROW	Intermediate-Deep	5/12/2016	13:14	365.18	44.05	321.13	--	
MW17	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW18 (4" RW)	TOC	Shallow-Intermediate	5/12/2016	13:48	357.91	DRY	DRY	--	Probe cannot fit past top of pump
MW19	TOC	Shallow	5/12/2016	13:40	358.86	11.94	346.92	--	
MW20	TOC	Intermediate	5/12/2016	13:36	359.93	35.63	324.30	--	
MW21	TOC	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 04/16/2012
MW22	TOC	Shallow-Intermediate	5/12/2016	13:38	358.52	30.04	328.48	--	
MW23	TOC	Intermediate	5/12/2016	13:02	357.08	38.96	318.12	--	
MW24 (4" RW)	TOC	Shallow-Intermediate	5/12/2016	13:30	361.97	33.36	328.61	--	
MW25	TOC	Intermediate	5/12/2016	13:34	358.70	32.50	326.20	--	
MW26	TOC	Deep	5/12/2016	13:20	363.81	43.70	320.11	--	
MW27 (2" RW)	TOC	Shallow-Intermediate	5/12/2016	NM	362.51	NM	NM	NM	Diameter of water probe is too large to fit past 2" remediation pump tubing.
MW28	TOC	Shallow-Intermediate	5/12/2016	13:44	358.41	27.76	330.65	--	
MW29 (2" RW)	TOC	Shallow-Intermediate	5/12/2016	NM	358.93	NM	NM	NM	Diameter of water probe is too large to fit past 2" remediation pump tubing.
MW30	TOC/Farmasonis	Deep	5/12/2016	13:00	356.46	37.59	318.87	--	
MW31 (2" RW)	TOC/Farmasonis	Intermediate	5/12/2016	NM	357.08	NM	NM	NM	
MW32 (4" RW)	TOC	Intermediate	5/12/2016	13:36	359.95	28.90	331.05	--	
MW33	TOC	Intermediate	5/12/2016	13:45	358.24	34.35	323.89	--	
MW34	TOC	Shallow	5/12/2016	13:06	357.88	10.96	346.92	--	
MW35	TOC	Intermediate	5/12/2016	13:08	358.46	39.69	318.77	--	
MW36	TOC	Intermediate	5/12/2016	13:10	357.98	41.33	316.65	--	
MW37	TOC	Shallow-Intermediate	5/12/2016	13:14	358.90	21.39	337.51	--	
MW38	TOC	Shallow-Intermediate	5/12/2016	13:18	364.42	19.94	344.48	--	
MW39	TOC/Farmasonis	Deep	5/12/2016	14:10	355.88	37.69	318.19	--	
MW40	TOC/Farmasonis	Deep	5/12/2016	14:06	356.32	37.60	318.72	--	
MW41 (2" RW)	TOC/Farmasonis	Intermediate	5/12/2016	NM	356.14	NM	NM	NM	
MW42	TOC/Farmasonis	Intermediate	5/12/2016	13:58	356.43	39.65	316.78	--	
MW43	56th Ave ROW	Shallow-Intermediate	5/12/2016	15:51	358.84	34.91	323.93	--	
MW44	56th Ave ROW	Intermediate	5/12/2016	16:15	354.93	DRY	DRY	DRY	
MW45	56th Ave ROW	Intermediate	5/12/2016	13:52	356.49	38.30	318.19	--	
MW46	56th Ave ROW	Intermediate	5/12/2016	15:57	357.00	39.76	317.24	--	
MW47	56th Ave ROW	Intermediate	5/12/2016	16:01	355.47	39.48	315.99	--	
MW48	56th Ave ROW	Intermediate	5/12/2016	10:50	355.41	39.34	316.07	--	
MW49	56th Ave ROW	Intermediate	5/12/2016	13:54	356.44	40.25	316.19	--	
MW50	56th Ave ROW	Intermediate	5/12/2016	15:45	361.99	35.50	326.49	--	
MW51	56th Ave ROW	Intermediate	5/12/2016	16:05	352.66	37.75	314.91	--	
MW52	56th Ave ROW	Intermediate	5/12/2016	16:03	355.61	39.67	315.94	--	
MW53	56th Ave ROW	Intermediate	5/12/2016	15:49	359.85	39.91	319.94	--	
MW54	TOC/Farmasonis	Shallow	5/12/2016	13:48	357.93	9.92	348.01	--	
MW55	56th Ave ROW	Intermediate	5/12/2016	15:59	356.50	39.85	316.65	--	
MW56	TOC/Farmasonis	Intermediate	5/12/2016	13:50	357.49	41.54	315.95	--	
MW57 (4" RW)	TOC/Farmasonis	Intermediate	5/12/2016	13:56	356.42	31.70	324.72	--	
MW58	TOC/Farmasonis	Intermediate	5/12/2016	14:04	355.40	39.59	315.81	--	
MW59	TOC/Farmasonis	Intermediate	5/12/2016	14:06	356.51	40.55	315.96	--	
MW60	56th Ave ROW	Intermediate	5/12/2016	15:53	358.58	40.76	317.82	--	
MW61	56th Ave ROW	Shallow	5/12/2016	15:55	357.17	8.45	348.72	--	
MW62	56th Ave ROW	Shallow	5/12/2016	15:49	360.50	10.46	350.04	--	
MW63	56th Ave ROW	Intermediate	5/12/2016	16:17	355.11	39.26	315.85	--	
MW64	56th Ave ROW	Deep	5/12/2016	16:19	355.18	36.90	318.28	--	
MW65	Drake	Intermediate	5/12/2016	16:23	353.08	37.98	315.10	--	

TABLE 1-2
Depth-to-Groundwater Level and Product Thickness Measurements (System On)
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, Washington

Well Identifier (a)	Property	Groundwater Zone	Date	Time (24:00)	Reference Elevation (feet) (b)	DTW (feet) (c)	Groundwater Elevation (feet) (d, e)	Product (LNAPL) Thickness (feet)	Notes / Observations
MW66	TOC/Farmasonis	Intermediate	5/12/2016	14:08	355.75	39.79	315.96	--	
MW67	Drake	Shallow	5/12/2016	16:17	355.73	11.25	344.48	--	
MW68	Drake	Shallow	5/12/2016	16:21	355.11	11.19	343.92	--	
MW69 (2" RW)	Drake	Intermediate	5/12/2016	16:08	353.76	38.26	315.50	--	
MW70 (2" RW)	Drake	Intermediate	5/12/2016	16:21	354.17	NM	NM	NM	Diameter of water probe is too large to fit past 2" remediation pump tubing.
MW71	Shin/Choi	Shallow	5/12/2016	11:02	347.92	13.86	334.06	2.31	Product
MW72	Shin/Choi	Shallow	5/12/2016	10:59	347.38	14.75	332.63	0.72	Product
MW73	Shin/Choi	Intermediate	5/12/2016	10:58	347.33	34.83	312.50	--	
MW74	Shin/Choi	Intermediate	5/12/2016	11:04	347.94	34.82	313.12	--	
MW75	56th Ave ROW	Intermediate	5/12/2016	NM	354.78	NM	NM	NM	Gauged only in Q1 Annual Event
MW76	Drake	Intermediate	5/12/2016	16:40	351.69	36.22	315.47	--	
MW77	Drake	Intermediate	5/12/2016	13:20	349.95	35.18	314.77	--	
MW78	Drake	Deep	5/12/2016	13:18	349.90	33.56	316.34	--	
MW79	TOC/Farmasonis	Shallow	5/12/2016	14:12	353.98	12.43	341.55	--	
MW80	TOC/Farmasonis	Shallow	5/12/2016	14:10	353.83	13.61	340.22	--	
MW81	TOC/Farmasonis	Intermediate	5/12/2016	14:14	355.60	39.72	315.88	--	
MW82	TOC/Farmasonis	Shallow-Intermediate	5/12/2016	14:08	355.59	29.35	326.24	--	
MW83	TOC/Farmasonis	NA	NA	NA	NA	NA	NA	NA	WELL DECOMMISSIONED 11/21/2011 (REPLACED WITH MW100)
MW84	Drake	Intermediate	5/12/2016	10:55	353.75	38.66	315.09	--	
MW85	Drake	Intermediate	5/12/2016	16:29	351.28	36.45	314.83	--	
MW86	Drake	Intermediate	5/12/2016	16:31	352.72	37.90	314.82	--	
MW87	Drake	Intermediate	5/12/2016	16:35	349.72	35.35	314.37	--	
MW88	Drake	Shallow-Intermediate	5/12/2016	16:42	351.63	16.19	335.44	--	
MW89	Drake	Intermediate	5/12/2016	16:04	353.86	38.63	315.23	--	
MW90 (4" RW)	TOC	Intermediate	5/12/2016	13:22	362.87	31.30	331.57	--	
MW91 (4" RW)	TOC	Intermediate	5/12/2016	13:28	362.67	DRY	DRY	DRY	Probe cannot fit past top of pump
MW92 (4" RW)	TOC/Farmasonis	Intermediate	5/12/2016	13:56	357.91	44.68	313.23	--	
MW93 (4" RW)	TOC/Farmasonis	Intermediate	5/12/2016	13:46	355.97	41.60	314.37	--	
MW94 (4" RW)	TOC/Farmasonis	Intermediate	5/12/2016	13:54	357.94	DRY	DRY	DRY	Probe cannot fit past top of pump
MW95 (4" RW)	Drake	Intermediate	5/12/2016	16:11	354.67	37.00	317.67	--	Remediation pump turned off 04/30/2015.
MW96 (4" RW)	Drake	Intermediate	5/12/2016	16:21	356.00	40.00	316.00	--	
MW97 (4" RW)	Drake	Intermediate	5/12/2016	16:23	354.29	37.61	316.68	--	
MW98 (4" RW)	Drake	Intermediate	5/12/2016	16:13	354.75	DRY	DRY	DRY	Probe cannot fit
MW99 (4" RW)	Drake	Intermediate	5/12/2016	16:44	353.58	DRY	DRY	DRY	Probe cannot fit past top of pump
MW100	TOC/Farmasonis	Shallow-Intermediate	5/12/2016	14:12	355.75	15.54	340.21	--	
MW101 (4" RW)	Drake	Intermediate	5/12/2016	10:54	352.05	37.10	314.95	--	
MW102	Herman	Shallow	5/12/2016	11:07	352.39	16.66	335.73	2.86	Product
MW103	Herman	Intermediate	5/12/2016	15:59	352.21	39.01	313.20	--	
MW104	Herman	Shallow	5/12/2016	11:09	353.00	11.98	341.02	--	Possible Product (not detected by meter)
MW105	Herman	Intermediate	5/12/2016	16:02	353.05	38.60	314.45	--	
MW106	Herman	Shallow	5/12/2016	15:53	349.24	13.34	335.90	--	
MW107	Herman	Intermediate	5/12/2016	15:55	349.56	35.75	313.81	--	
MW108	Herman	Intermediate	5/12/2016	16:00	351.09	36.50	314.59	--	
MW109	Herman	Intermediate	5/12/2016	11:08	353.35	38.75	314.60	--	

Notes:

- (a) Remediation wells (identified as "RW") are 2 or 4 inches in diameter and are connected to a multi-phase extraction system. Measurements are not collected from 2" RWs because the diameter of the water probe is too large to fit past pump tubing.
- (b) Reference elevation is the north side of the top of the well casing (except for MW25 where the reference elevation is the high point on the PVC casing and for MW99 where the reference elevation is the top of the well cap). Elevations are measured in feet above mean sea level (North American Vertical Datum of 1988 [NAVD 88]). PACE Engineers, Inc. performed well location and elevation surveys for all active wells in April and May 2014.
- (c) DTW/DTP was measured from surveyed reference elevation [see note (b)].
- (d) Where product (LNAPL) thickness was measured, groundwater elevation was adjusted to account for the presence of LNAPL using the method from "Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Wells" (Lenhard & Parker 1990). Product thickness is calculated using DTP level measured concurrently with DTW level.
- (e) Groundwater elevation represents "system on" data (i.e., pumping conditions).

Definitions:

- = No measurable product or odor observed.
- DRY = Unable to measure DTW due to insufficient groundwater (in monitoring well) or groundwater level was below the top of pump (in remediation well).
- Trace = Observed <0.01 feet of LNAPL.
- Sheen = Iridescence on surface of groundwater that is indicative of LNAPL.

Acronyms:

List of Properties:



TABLE 1-2
Depth-to-Groundwater Level and Product Thickness Measurements (System On)
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, Washington

Well Identifier (a)	Property	Groundwater Zone	Date	Time (24:00)	Reference Elevation (feet) (b)	DTW (feet) (c)	Groundwater Elevation (feet) (d, e)	Product (LNAPL) Thickness (feet)	Notes / Observations
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DTP = depth-to-product

DTW = depth-to-groundwater

LNAPL = liquid non-aqueous phase liquid

NA = not available

NM = not measured

RW = remediation well

TOC = 24205 56th Avenue West, Mountlake Terrace WA

TOC/Farmasonis = 24225 56th Avenue West, Mountlake Terrace WA

Drake = 24309 56th Avenue West, Mountlake Terrace WA

Herman = 24311 56th Avenue West, Mountlake Terrace WA

Shin/Choi = 24325 56th Avenue West, Mountlake Terrace WA

56th Ave ROW = right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties

242nd St ROW = portion of right-of-way adjacent to TOC Property

TABLE 1-3
Comparison of System-Off and System-On Groundwater Elevations
May 2016

TOC Facility #01-176; Mountlake Terrace, Washington

	Property	Groundwater Zone	Groundwater Elevation - System-Off (feet)	Groundwater Elevation - System-On (feet)	System Off-System On (feet)	Notes / Observations
MW01	TOC	NA	NA	NA	NA	WELL DECOMMISSIONED 10/02/2009
MW02	TOC	Shallow	348.15	348.59	-0.44	
MW03	TOC	Shallow	349.78	349.66	0.12	
MW04	56th Ave ROW	Shallow	351.32	351.59	-0.27	
MW05	242nd St ROW	Shallow	352.98	353.46	-0.48	
MW06	TOC	Shallow	346.60	347.14	-0.54	
MW07	TOC/Farmasonis	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW08	56th Ave ROW	Shallow-Intermediate	339.79	335.48	4.31	
MW09	TOC	Shallow-Intermediate	334.99	331.62	3.37	
MW10	TOC	Intermediate	329.82	324.38	5.44	
MW11 (4" RW)	TOC	Intermediate	338.45	332.24	6.21	
MW12	56th Ave ROW	Shallow	347.89	348.56	-0.67	
MW13	56th Ave ROW	Intermediate	317.03	316.69	0.34	
MW14	TOC/Farmasonis	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW15	TOC	Intermediate	326.13	317.81	8.32	
MW16	242nd St ROW	Intermediate-Deep	320.87	321.13	-0.26	
MW17	TOC/Farmasonis	NA	NA	NA	NA	WELL DECOMMISSIONED 11/29/2004
MW18 (4" RW)	TOC	Shallow-Intermediate	NM	DRY	NA	
MW19	TOC	Shallow	346.31	346.92	-0.61	
MW20	TOC	Intermediate	329.89	324.30	5.59	
MW21	TOC	NA	NA	NA	NA	WELL DECOMMISSIONED 04/16/2012
MW22	TOC	Shallow-Intermediate	329.91	328.48	1.43	
MW23	TOC	Intermediate	317.98	318.12	-0.14	
MW24 (4" RW)	TOC	Shallow-Intermediate	340.04	328.61	11.43	
MW25	TOC	Intermediate	331.94	326.20	5.74	
MW26	TOC	Deep	319.90	320.11	-0.21	
MW27 (2" RW)	TOC	Shallow-Intermediate	NM	NM	NA	
MW28	TOC	Shallow-Intermediate	331.39	330.65	0.74	
MW29 (2" RW)	TOC	Shallow-Intermediate	NM	NM	NA	
MW30	TOC/Farmasonis	Deep	318.64	318.87	-0.23	
MW31 (2" RW)	TOC/Farmasonis	Intermediate	NM	NM		
MW32 (4" RW)	TOC	Intermediate	336.79	331.05	5.74	
MW33	TOC	Intermediate	323.92	323.89	0.03	
MW34	TOC	Shallow	346.31	346.92	-0.61	
MW35	TOC	Intermediate	318.82	318.77	0.05	
MW36	TOC	Intermediate	317.05	316.65	0.40	
MW37	TOC	Shallow-Intermediate	338.40	337.51	0.89	
MW38	TOC	Shallow-Intermediate	346.20	344.48	1.72	
MW39	TOC/Farmasonis	Deep	317.96	318.19	-0.23	
MW40	TOC/Farmasonis	Deep	318.48	318.72	-0.24	
MW41 (2" RW)	TOC/Farmasonis	Intermediate	NM	NM	NA	
MW42	TOC/Farmasonis	Intermediate	316.75	316.78	-0.03	
MW43	56th Ave ROW	Shallow-Intermediate	324.43	323.93	0.50	
MW44	56th Ave ROW	Intermediate	DRY	DRY	NA	

TABLE 1-3
Comparison of System-Off and System-On Groundwater Elevations
May 2016

TOC Facility #01-176; Mountlake Terrace, Washington

	Property	Groundwater Zone	Groundwater Elevation - System-Off (feet)	Groundwater Elevation - System-On (feet)	System Off-System On (feet)	Notes / Observations
MW45	56th Ave ROW	Intermediate	317.87	318.19	-0.32	
MW46	56th Ave ROW	Intermediate	317.04	317.24	-0.20	
MW47	56th Ave ROW	Intermediate	316.13	315.99	0.14	
MW48	56th Ave ROW	Intermediate	315.60	316.07	-0.47	
MW49	56th Ave ROW	Intermediate	316.40	316.19	0.21	
MW50	56th Ave ROW	Intermediate	328.50	326.49	2.01	
MW51	56th Ave ROW	Intermediate	314.61	314.91	-0.30	
MW52	56th Ave ROW	Intermediate	315.60	315.94	-0.34	
MW53	56th Ave ROW	Intermediate	319.86	319.94	-0.08	
MW54	TOC/Farmasonis	Shallow	347.34	348.01	-0.67	
MW55	56th Ave ROW	Intermediate	316.51	316.65	-0.14	
MW56	TOC/Farmasonis	Intermediate	316.64	315.95	0.69	
MW57 (4" RW)	TOC/Farmasonis	Intermediate	315.92	324.72	-8.80	Datum appears anomalous
MW58	TOC/Farmasonis	Intermediate	315.62	315.81	-0.19	
MW59	TOC/Farmasonis	Intermediate	316.59	315.96	0.63	
MW60	56th Ave ROW	Intermediate	318.01	317.82	0.19	
MW61	56th Ave ROW	Shallow	347.46	348.72	-1.26	
MW62	56th Ave ROW	Shallow	349.48	350.04	-0.56	
MW63	56th Ave ROW	Intermediate	315.70	315.85	-0.15	
MW64	56th Ave ROW	Deep	318.03	318.28	-0.25	
MW65	Drake	Intermediate	314.79	315.10	-0.31	
MW66	TOC/Farmasonis	Intermediate	316.52	315.96	0.56	
MW67	Drake	Shallow	343.86	344.48	-0.62	
MW68	Drake	Shallow	343.38	343.92	-0.54	
MW69 (2" RW)	Drake	Intermediate	NM	315.50	NA	Inaccessible due to vehicle
MW70 (2" RW)	Drake	Intermediate	NM	NM	NA	Inaccessible due to vehicle
MW71	Shin/Choi	Shallow	NM	334.06	NA	Product in well
MW72	Shin/Choi	Shallow	NM	332.63	NA	Product in well
MW73	Shin/Choi	Intermediate	312.19	312.50	-0.31	
MW74	Shin/Choi	Intermediate	312.75	313.12	-0.37	
MW75	56th Ave ROW	Intermediate	NM	NM	NA	Well is only measured during annual (first quarter) event and is subject to Traffic Control Plan (WSDOT 2014).
MW76	Drake	Intermediate	315.22	315.47	-0.25	
MW77	Drake	Intermediate	314.41	314.77	-0.36	
MW78	Drake	Deep	315.99	316.34	-0.35	
MW79	TOC/Farmasonis	Shallow	340.79	341.55	-0.76	
MW80	TOC/Farmasonis	Shallow	339.61	340.22	-0.61	
MW81	TOC/Farmasonis	Intermediate	316.07	315.88	0.19	
MW82	TOC/Farmasonis	Shallow-Intermediate	326.76	326.24	0.52	
MW83	TOC/Farmasonis	NA	NA	NA	NA	WELL DECOMMISSIONED 11/21/2011 (REPLACED WITH MW100)
MW84	Drake	Intermediate	NM	315.09	NA	Inaccessible due to vehicle
MW85	Drake	Intermediate	314.54	314.83	-0.29	
MW86	Drake	Intermediate	314.54	314.82	-0.28	
MW87	Drake	Intermediate	314.16	314.37	-0.21	
MW88	Drake	Shallow-Intermediate	335.01	335.44	-0.43	
MW89	Drake	Intermediate	314.97	315.23	-0.26	
MW90 (4" RW)	TOC	Intermediate	335.58	331.57	4.01	
MW91 (4" RW)	TOC	Intermediate	337.83	DRY	NA	
MW92 (4" RW)	TOC/Farmasonis	Intermediate	316.76	313.23	3.53	

TABLE 1-3
Comparison of System-Off and System-On Groundwater Elevations
May 2016

TOC Facility #01-176; Mountlake Terrace, Washington

	Property	Groundwater Zone	Groundwater Elevation - System-Off (feet)	Groundwater Elevation - System-On (feet)	System Off-System On (feet)	Notes / Observations
MW93 (4" RW)	TOC/Farmasonis	Intermediate	316.64	314.37	2.27	
MW94 (4" RW)	TOC/Farmasonis	Intermediate	DRY	DRY	NA	
MW95 (4" RW)	Drake	Intermediate	315.46	317.67	-2.21	
MW96 (4" RW)	Drake	Intermediate	315.96	316.00	-0.04	
MW97 (4" RW)	Drake	Intermediate	315.37	316.68	-1.31	
MW98 (4" RW)	Drake	Intermediate	NM	DRY	NA	Inaccessible due to vehicle
MW99 (4" RW)	Drake	Intermediate	NM	DRY	NA	Inaccessible due to vehicle
MW100	TOC/Farmasonis	Shallow-Intermediate	338.61	340.21	-1.60	
MW101 (4" RW)	Drake	Intermediate	314.66	314.95	-0.29	
MW102	Herman	Shallow	NM	335.73	NA	Product in well
MW103	Herman	Intermediate	312.92	313.20	-0.28	
MW104	Herman	Shallow	340.71	341.02	-0.31	Sheen
MW105	Herman	Intermediate	314.20	314.45	-0.25	
MW106	Herman	Shallow	335.42	335.90	-0.48	
MW107	Herman	Intermediate	313.48	313.81	-0.33	
MW108	Herman	Intermediate	314.42	314.59	-0.17	
MW109	Herman	Intermediate	314.03	314.60	-0.57	

Notes:

Yellow highlighted values indicate where the difference between the System-Off and System-On groundwater elevations are positive, indicating hydraulic control by the remediation system in the area.

Definitions:

-- = No measurable product or odor observed.

DRY = Unable to measure DTW due to insufficient groundwater (in monitoring well) or groundwater level was below the top of pump (in remediation well).

Trace = Observed <0.01 feet of LNAPL.

Sheen = Iridescence on surface of groundwater that is indicative of LNAPL.

Acronyms:

DTP = depth-to-product

DTW = depth-to-groundwater

LNAPL = liquid non-aqueous phase liquid

NA = not available

NM = not measured

RW = remediation well

TABLE 2-1
Groundwater Quality Results for Select Constituents
Shallow Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)								
					Total Petroleum Hydrocarbons			Volatile Organic Compounds					
					Method NWTPH-Gx	Method NWTPH-Dx		Method SW8021B / SW8260C ⁽¹⁾					
					Gasoline-Range (GRPH)	Motor Oil-Range (ORPH) ⁽²⁾	Diesel-Range (DRPH) ⁽²⁾	Benzene	Toluene	Ethylbenzene	Total Xylenes	m, p-Xylene	o-Xylene
MTCA Method A Cleanup Level (µg/L)					1,000/800⁽³⁾	500	500	5	1,000	700	1,000	NE⁽⁴⁾	NE⁽⁴⁾
MW54	TOC/Farmasonis	5/26/2016	MW54	Peristaltic Pump	100U	350U	70U	0.35U	1U	1U	NA	2U	1U
MW67	Drake	5/25/2016	MW67	Peristaltic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW68	Drake	5/23/2016	MW68	Peristaltic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW71	Shin/Choi	5/12/2016	--	--	LNAPL								
MW72	Shin/Choi	5/12/2016	--	--	LNAPL								
MW102	Herman	5/12/2016	--	--	LNAPL								
MW104	Herman	5/20/2016	MW104	Peristaltic Pump	9,300	340	4,700	0.65	17	370	NA	1100	130
MW106	Herman	5/23/2016	MW106	Peristaltic Pump	100U	350U	130	0.35U	1U	1U	NA	2U	1U

TABLE 2-1
Groundwater Quality Results for Select Constituents
Shallow Zone Wells
Second Quarter 2016
TOC Facility #01-176; Mountlake Terrace, WA

NOTES & DEFINITIONS:

Groundwater quality results are presented based on exceedance of MTCA Method A Cleanup Levels, Table 720-1 of WAC 173-340-900, revised October 12, 2007.

Groundwater samples were analyzed by Friedman & Bruya, Inc. The analytical laboratory reports are included as an appendix.

Red denotes sample concentration equals or exceeds MTCA Method A Cleanup Levels for groundwater.

Black denotes sample concentration was detected but does not exceed MTCA Method A Cleanup Levels for groundwater.

Gray denotes sample concentration was undetected at the method reporting limit, the constituent was not analyzed, or the well was dry.

⁽¹⁾ If samples were analyzed by two methods, the maximum concentration of the two results is reported.

⁽²⁾ For groundwater samples with detected concentrations of ORPH and/or DRPH, the sample chromatographic pattern does not resemble the diesel extended analysis standard used for quantitation.

⁽³⁾ Cleanup level is 1,000 µg/L when benzene is not present and 800 µg/L when benzene is present.

⁽⁴⁾ Cleanup levels for individual xylenes have not been established.

-- = Sample was not collected.

LNAPL = Indicates well was not sampled due to presence of product (LNAPL).

NA = Indicates the compound was not analyzed.

NE = Indicates MTCA Method A Cleanup Level has not been established.

LABORATORY NOTES:

U = Indicates the compound was undetected at the method reporting limit.

LIST OF PROPERTIES:

TOC = 24205 56th Avenue West, Mountlake Terrace WA

TOC/Farmasonis = 24225 56th Avenue West, Mountlake Terrace WA

Drake = 24309 56th Avenue West, Mountlake Terrace WA

56th Ave ROW = right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties

Herman = 24311 56th Avenue West, Mountlake Terrace WA

Shin/Choi = 24325 56th Avenue West, Mountlake Terrace WA

ACRONYMS:

µg/L = micrograms per liter

LNAPL = light non-aqueous phase liquid

MTCA = Model Toxics Control Act

NWTPH-Dx = Northwest Total Petroleum Hydrocarbon - diesel-range organics

NWTPH-Gx = Northwest Total Petroleum Hydrocarbon - gasoline-range organics

WAC = Washington Administrative Code

TABLE 2-2
Groundwater Quality Results for Common Fuel Additives
Shallow Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)																				
					Volatile Organic Compounds			Metals		Semivolatile Organic Compounds / Polycyclic Aromatic Hydrocarbons ⁽¹⁾															
					Method SW8260C		Method 8011M	Method 200.8		EPA Method 8270D SIM															
					Methyl t-butyl ether (MTBE)	1,2-Dichloroethane (EDC)	1,2-Dibromoethane (EDB)	Dissolved Lead	Total Lead	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
MTCA Method A Cleanup Level (µg/L)					20	5	0.01	15	15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	160	0.1	0.1
MW54	TOC/Farmasonis	5/26/2016	MW54	Peristaltic Pump	1U	NA	NA	NA	NA	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U
MW67	Drake	5/25/2016	MW67	Peristaltic Pump	1U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW68	Drake	5/23/2016	MW68	Peristaltic Pump	1U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW71	Shin/Choi	5/12/2016	--	--																					
MW72	Shin/Choi	5/12/2016	--	--																					
MW102	Herman	5/12/2016	--	--																					
MW104	Herman	5/20/2016	MW104	Peristaltic Pump	1U	1U	0.01U	1U	1U	0.1	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.09	0.06U	270
MW106	Herman	5/23/2016	MW106	Peristaltic Pump	1U	1U	0.01U	1U	1U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U	0.06U

NOTES & DEFINITIONS:

Groundwater quality results are presented based on exceedance of MTCA Method A Cleanup Levels, Table 720-1 of WAC 173-340-900, revised October 12, 2007.

Groundwater samples were analyzed by Friedman & Bruya, Inc. The analytical laboratory reports are included as an appendix.

Red denotes sample concentration equals or exceeds MTCA Method A Cleanup Levels for groundwater.

Black denotes sample concentration was detected but does not exceed MTCA Method A Cleanup Levels for groundwater.

Italic denotes the constituent was not detected at or above the method reporting limit (MRL); however, the MRL was elevated due to sample dilution and exceeds the MTCA cleanup level.

Gray denotes sample concentration was undetected at the method reporting limit, the constituent was not analyzed, or the well was dry.

⁽¹⁾ With the exception of Naphthalene, preliminary screening results for carcinogenic PAHs are compared to the MTCA Method A Cleanup Level provided for benzo(a)pyrene on Table 720-1 of WAC 173-340-900. Per MTCA, this value represents the total concentration that all PAHs must meet using the toxicity equivalency methodology of WAC 173-340-708(8).

-- = Sample was not collected.

NA = Indicates the compound was not analyzed.

LABORATORY NOTES:

U = Indicates the compound was undetected at the method reporting limit.

ACRONYMS:

µg/L = micrograms per liter

MTCA = Model Toxics Control Act

PAH = Polycyclic Aromatic Hydrocarbons

WAC = Washington Administrative Code

LIST OF PROPERTIES:

TOC = 24205 56th Avenue West, Mountlake Terrace WA

TOC/Farmasonis = 24225 56th Avenue West, Mountlake Terrace WA

Drake = 24309 56th Avenue West, Mountlake Terrace WA

56th Ave ROW = right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties

Shin/Choi = 24325 56th Avenue West, Mountlake Terrace WA

TABLE 3-1
Groundwater Quality Results for Select Constituents
Intermediate Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier ⁽¹⁾	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)								
					Total Petroleum Hydrocarbons			Volatile Organic Compounds					
					Method NWTPH-Gx	Method NWTPH-Dx		Method SW8021B / SW8260C ⁽²⁾					
					Gasoline-Range (GRPH)	Motor Oil-Range (ORPH) ⁽³⁾	Diesel-Range (DRPH) ⁽³⁾	Benzene	Toluene	Ethylbenzene	Total Xylenes	m, p-Xylene	o-Xylene
MTCA Method A Cleanup Level (µg/L)					1,000/800 ⁽⁴⁾	500	500	5	1,000	700	1,000	NE ⁽⁵⁾	NE ⁽⁵⁾
MW10	TOC	5/18/2016	MW10	Peristaltic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW11	TOC	5/16/2016	MW11	Pneumatic Pump	720	NA	NA	0.49	5	27	NA	120	41
MW15	TOC	--	--	--	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW20	TOC	5/18/2016	MW20	Bailer	100U	250U	89	0.35U	1U	1U	NA	2U	1U
MW20*	TOC	5/18/2016	MLT-02	Bailer	100U	250U	86	0.35U	1U	1U	NA	2U	1U
MW25	TOC	5/18/2016	MW25	Peristaltic Pump	530	NA	NA	0.62	21	3.4	NA	48	29
MW25*	TOC	5/18/2016	MLT-05	Peristaltic Pump	600	NA	NA	0.69	22	3.5	NA	49	29
MW31 (2" RW)	TOC/Farmasonis	--	--	--	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW32 (4" RW)	TOC	5/16/2016	MW32	Pneumatic Pump	730	NA	NA	0.35U	1.6	1.1	NA	33	17
MW33	TOC	--	--	--	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
MW45	56th Ave ROW	5/26/2016	MW45	Bailer	500	NA	NA	0.35U	1U	6.3	NA	50	7.5
MW48	56th Ave ROW	5/24/2016	MW48	Bailer	4,800	NA	NA	0.37	1U	39	NA	240	44
MW49	56th Ave ROW	5/25/2016	MW49	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW50	56th Ave ROW	5/18/2016	MW50	Bailer	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW51	56th Ave ROW	5/20/2016	MW51	Bailer	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW52	56th Ave ROW	5/24/2016	MW52	Bailer	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW53	56th Ave ROW	5/18/2016	MW53	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW55	56th Ave ROW	5/24/2016	MW55	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW56	TOC/Farmasonis	5/25/2016	MW56	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW57 (4" RW)	TOC/Farmasonis	--	--	--	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
MW58	TOC/Farmasonis	5/25/2016	MW58	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW59	TOC/Farmasonis	5/25/2016	MW59	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW60	56th Ave ROW	5/25/2016	MW60	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW63	56th Ave ROW	5/25/2016	MW63	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW65	Drake	5/24/2016	MW65	Submersible Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW66	TOC/Farmasonis	5/24/2016	MW66	Bailer	100U	300U	60U	0.35U	1U	1U	NA	2U	1U
MW69 (2" RW)	Drake	5/24/2016	MW69	Submersible Pump	3,300	250U	1,100	0.38	1U	19	NA	120	1.6

TABLE 3-1
Groundwater Quality Results for Select Constituents
Intermediate Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier ⁽¹⁾	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)								
					Total Petroleum Hydrocarbons			Volatile Organic Compounds					
					Method NWTPH-Gx	Method NWTPH-Dx		Method SW8021B / SW8260C ⁽²⁾					
					Gasoline-Range (GRPH)	Motor Oil-Range (ORPH) ⁽³⁾	Diesel-Range (DRPH) ⁽³⁾	Benzene	Toluene	Ethylbenzene	Total Xylenes	m, p-Xylene	o-Xylene
MTCA Method A Cleanup Level (µg/L)					1,000/800 ⁽⁴⁾	500	500	5	1,000	700	1,000	NE ⁽⁵⁾	NE ⁽⁵⁾
MW70 (2" RW)	Drake	5/13/2016	MW70	Peristaltic Pump	100U	250U	540	0.35U	1U	1U	NA	2U	1U
MW73	Shin/Choi	5/17/2016	MW73	Bailer	67,000	250U	3,300	12,000	4,000	2,300	NA	7,200	3,100
MW74	Shin/Choi	5/17/2016	MW74	Bailer	100,000	450	5,400	19,000	18,000	1,800	NA	6,100	1,800
MW77	Drake	5/20/2016	MW77	Bailer	100U	250U	50U	0.35U	1U	1U	NA	2U	1U
MW84	Drake	5/23/2016	MW84	Submersible Pump	400	250U	190	0.35U	1U	2.2	NA	8.4	1U
MW85	Drake	5/25/2016	MW85	Submersible Pump	100U	250U	50U	0.35U	1U	1U	NA	2U	1U
MW85	Drake	6/23/2016	MW85	Submersible Pump	100U	250U	50U	NA	NA	NA	NA	NA	NA
MW86	Drake	5/23/2016	MW86	Submersible Pump	230	250U	83	0.35U	1U	1U	NA	2U	1U
MW86*	Drake	5/23/2016	MLT-03	Submersible Pump	230	250U	86	0.35U	1U	1U	NA	2U	1U
MW86	Drake	6/23/2016	MW86	Submersible Pump	290	250U	130	NA	NA	NA	NA	NA	NA
MW89	Drake	5/24/2016	MW89	Submersible Pump	100U	300U	60U	0.35U	1U	1U	NA	2U	1U
MW90	TOC	5/16/2016	MW90	Pneumatic Pump	4,600	NA	NA	1.7	150	87	NA	570	290
MW91	TOC	5/16/2016	MW91	Pneumatic Pump	100U	250U	200	0.35U	1U	1U	NA	2.3	1.4
MW95 (4" RW)	Drake	5/16/2016	MW95	Pneumatic Pump	230	NA	NA	0.35U	1U	1U	NA	3.6	1U
MW96 (4" RW)	Drake	--	--	--	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
MW98 (4" RW)	Drake	5/16/2016	MW98	Pneumatic Pump	200	NA	NA	0.35U	1U	4	NA	6	1U
MW101 (4" RW)	Drake	--	--	--	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW101 (4" RW)	Drake	6/23/2016	MW101	Centrifugal Pump	100U	250U	50U	NA	NA	NA	NA	NA	NA
MW103	Herman	5/19/2016	MW103	Bailer	800	250U	860	320	11	1U	NA	11	3.7
MW105	Herman	5/19/2016	MW105	Bailer	100U	300U	60U	0.35U	1U	1U	NA	2U	1U
MW107	Herman	5/23/2016	MW107	Submersible Pump	100U	300U	60U	0.35U	1U	1U	NA	2U	1U
MW108	Herman	5/19/2016	MW108	Bailer	1,600	250U	320	0.69	1U	4.1	NA	10	1U
MW108	Herman	6/23/2016	MW108	Submersible Pump	3,200	250U	650	NA	NA	NA	NA	NA	NA
MW109	Herman	5/19/2016	MW109	Bailer	100U	300U	60U	0.35U	1U	1U	NA	2U	1U

NOTES & DEFINITIONS:

Groundwater quality results are presented based on exceedance of MTCA Method A Cleanup Levels, Table 720-1 of WAC 173-340-900, revised October 12, 2007.

TABLE 3-1
Groundwater Quality Results for Select Constituents
Intermediate Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier ⁽¹⁾	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)								
					Total Petroleum Hydrocarbons			Volatile Organic Compounds					
					Method NWTPH-Gx	Method NWTPH-Dx		Method SW8021B / SW8260C ⁽²⁾					
					Gasoline-Range (GRPH)	Motor Oil-Range (ORPH) ⁽³⁾	Diesel-Range (DRPH) ⁽³⁾	Benzene	Toluene	Ethylbenzene	Total Xylenes	m, p-Xylene	o-Xylene
MTCA Method A Cleanup Level (µg/L)					1,000/800 ⁽⁴⁾	500	500	5	1,000	700	1,000	NE ⁽⁵⁾	NE ⁽⁵⁾

Groundwater samples were analyzed by Friedman & Bruya, Inc. The analytical laboratory reports are included as an appendix.

Red denotes sample concentration equals or exceeds MTCA Method A Cleanup Levels for groundwater.

Black denotes sample concentration was detected but does not exceed MTCA Method A Cleanup Levels for groundwater.

Gray denotes sample concentration was undetected at the method reporting limit, the constituent was not analyzed, or the well was dry.

⁽¹⁾ Remediation wells (identified as "RW") are either 2 or 4 inches in diameter and are connected to a multi-phase extraction system.

⁽²⁾ If samples were analyzed by two methods, the maximum concentration of the two results is reported.

⁽³⁾ For groundwater samples with detected concentrations of ORPH and/or DRPH, the sample chromatographic pattern does not resemble the diesel extended analysis standard used for quantitation.

⁽⁴⁾ Cleanup level is 1,000 µg/L when benzene is not present and 800 µg/L when benzene is present.

⁽⁵⁾ Cleanup levels for individual xylenes have not been established.

-- = Sample was not collected.

* = Indicates blind field duplicate sample was collected for quality assurance/quality control purposes.

Dry = Indicates well could not be sampled due to insufficient groundwater sample volume.

NA = Indicates the compound was not analyzed.

NE = Indicates MTCA Method A Cleanup Level has not been established.

LABORATORY NOTES:

U = Indicates the compound was undetected at the reported concentration.

ACRONYMS:

µg/L = micrograms per liter

MTCA = Model Toxics Control Act

NWTPH-Dx = Northwest Total Petroleum Hydrocarbon - diesel-range organics

NWTPH-Gx = Northwest Total Petroleum Hydrocarbon - gasoline-range organics

WAC = Washington Administrative Code

LIST OF PROPERTIES:

TOC = 24205 56th Avenue West, Mountlake Terrace WA

TABLE 3-1
Groundwater Quality Results for Select Constituents
Intermediate Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier ⁽¹⁾	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)								
					Total Petroleum Hydrocarbons			Volatile Organic Compounds					
					Method NWTPH-Gx	Method NWTPH-Dx		Method SW8021B / SW8260C ⁽²⁾					
					Gasoline-Range (GRPH)	Motor Oil-Range (ORPH) ⁽³⁾	Diesel-Range (DRPH) ⁽³⁾	Benzene	Toluene	Ethylbenzene	Total Xylenes	m, p-Xylene	o-Xylene
MTCA Method A Cleanup Level (µg/L)					1,000/800⁽⁴⁾	500	500	5	1,000	700	1,000	NE⁽⁵⁾	NE⁽⁵⁾

TOC/Farmasonis = 24225 56th Avenue West, Mountlake Terrace WA

Drake = 24309 56th Avenue West, Mountlake Terrace WA

56th Ave ROW = right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties

Herman = 24311 56th Avenue West, Mountlake Terrace WA

Shin/Choi = 24325 56th Avenue West, Mountlake Terrace WA

TABLE 3-2
Groundwater Quality Results for Common Fuel Additives
Intermediate Zone Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier ⁽¹⁾	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)																				
					Volatile Organic Compounds			Metals		Semivolatile Organic Compounds / Polycyclic Aromatic Hydrocarbons ⁽²⁾															
					Method SW8260C	Method 8011M		Method 200.8		EPA Method 8270D SIM															
					Methyl t-butyl ether (MTBE)	1,2-Dichloroethane (EDC)	1,2-Dibromoethane (EDB)	Dissolved Lead	Total Lead	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
MTCA Method A Cleanup Level (µg/L)					20	5	0.01	15	15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	160	0.1	0.1

NOTES & DEFINITIONS:

Groundwater quality results are presented based on exceedance of MTCA Method A Cleanup Levels, Table 720-1 of WAC 173-340-900, revised October 12, 2007.

Groundwater samples were analyzed by Friedman & Bruya, Inc. The analytical laboratory reports are included as an appendix.

Red denotes sample concentration equals or exceeds MTCA Method A Cleanup Levels for groundwater.

Black denotes sample concentration was detected but does not exceed MTCA Method A Cleanup Levels for groundwater.

Gray denotes sample concentration was undetected at the method reporting limit, the constituent was not analyzed, or the well was dry.

⁽¹⁾ Remediation wells (identified as "RW") are either 2 or 4 inches in diameter and are connected to a multi-phase extraction system.

⁽²⁾ With the exception of Naphthalene, preliminary screening results for carcinogenic PAHs are compared to the MTCA Method A Cleanup Level provided for benzo(a)pyrene on Table 720-1 of WAC 173-340-900. Per MTCA, this value represents the total concentration that all PAHs must meet using the toxicity equivalency methodology of WAC 173-340-708(8).

-- = Sample was not collected.

* = Indicates blind field duplicate sample was collected for quality assurance/quality control purposes.

Dry = Indicates well could not be sampled due to insufficient groundwater sample volume.

NA = Indicates the compound was not analyzed.

LABORATORY NOTES:

U = Indicates the compound was undetected at the reported concentration.

LIST OF PROPERTIES:

TOC = 24205 56th Avenue West, Mountlake Terrace WA

TOC/Farmasonis = 24225 56th Avenue West, Mountlake Terrace WA

Drake = 24309 56th Avenue West, Mountlake Terrace WA

56th Ave ROW = right-of-way adjacent to TOC, TOC/Farmasonis & Drake properties

Herman = 24311 56th Avenue West, Mountlake Terrace WA

Shin/Choi = 24325 56th Avenue West, Mountlake Terrace WA

ACRONYMS:

µg/L = micrograms per liter

PAH = Polycyclic Aromatic Hydrocarbons

MTCA = Model Toxics Control Act

WAC = Washington Administrative Code

TABLE 4-1
Groundwater Quality Results for Select Constituents
Shallow-Intermediate Zone Intersect Wells
Second Quarter 2016
 TOC Facility #01-176; Mountlake Terrace, WA

Sample Location/ Well Identifier ⁽¹⁾	Property	Date	Sample Identifier	Sample Method	Analytical Results (µg/L)								
					Total Petroleum Hydrocarbons			Volatile Organic Compounds					
					Method NWTPH-Gx	Method NWTPH-Dx		Method SW8021B / SW8260C ⁽²⁾					
					Gasoline-Range (GRPH)	Motor Oil-Range (ORPH)	Diesel-Range (DRPH)	Benzene	Toluene	Ethylbenzene	Total Xylenes	m, p-Xylene	o-Xylene
MTCA Method A Cleanup Level (µg/L)					1,000/800⁽³⁾	500	500	5	1,000	700	1,000	NE⁽⁴⁾	NE⁽⁴⁾
MW09	TOC	5/18/2016	MW09	Peristaltic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW09*	TOC	5/18/2016	MLT-01	Peristaltic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW22	TOC	5/18/2016	MW22	Peristaltic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW24	TOC	5/16/2016	MW24	Pneumatic Pump	470	NA	NA	1	5.1	2	NA	36	25
MW27 (2" RW)	TOC	5/16/2016	MW27	Submersible Pump	230	NA	NA	0.35U	1U	11	NA	32	5.9
MW28	TOC	5/18/2016	MW28	Pneumatic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW28*	TOC	5/18/2016	MLT-04	Pneumatic Pump	100U	NA	NA	0.35U	1U	1U	NA	2U	1U
MW29	TOC	5/16/2016	MW29	Pneumatic Pump	200	NA	NA	0.35U	1U	1U	NA	4.6	1U

NOTES & DEFINITIONS:

Well screens intersect Shallow and Intermediate Zone conditions.

Groundwater quality results are presented based on exceedance of MTCA Method A Cleanup Levels, Table 720-1 of WAC 173-340-900, revised October 12, 2007.

Groundwater samples were analyzed by Friedman & Bruya, Inc. The analytical laboratory reports are included as an appendix.

Red denotes sample concentration equals or exceeds MTCA Method A Cleanup Levels for groundwater.

Black denotes sample concentration was detected but does not exceed MTCA Method A Cleanup Levels for groundwater.

Gray denotes sample concentration was undetected at the method reporting limit, the constituent was not analyzed, or the well was dry.

⁽¹⁾ Remediation wells (identified as "RW") are either 2 or 4 inches in diameter and are connected to a multi-phase extraction system.

⁽²⁾ If samples were analyzed by two methods, the maximum concentration of the two results is reported.

⁽³⁾ Cleanup level is 1,000 µg/L when benzene is not present and 800 µg/L when benzene is present.

⁽⁴⁾ Cleanup levels for individual xylenes have not been established.

-- = Sample was not collected.

* = Indicates blind field duplicate sample was collected for quality assurance/quality control purposes.

NA = Indicates the compound was not analyzed.

NE = Indicates MTCA Method A Cleanup Level has not been established.

ACRONYMS:

µg/L = micrograms per liter

MTCA = Model Toxics Control Act

NWTPH-Dx = Northwest Total Petroleum Hydrocarbon - diesel-range organics

NWTPH-Gx = Northwest Total Petroleum Hydrocarbon - gasoline-range organics

WAC = Washington Administrative Code

LABORATORY NOTES:

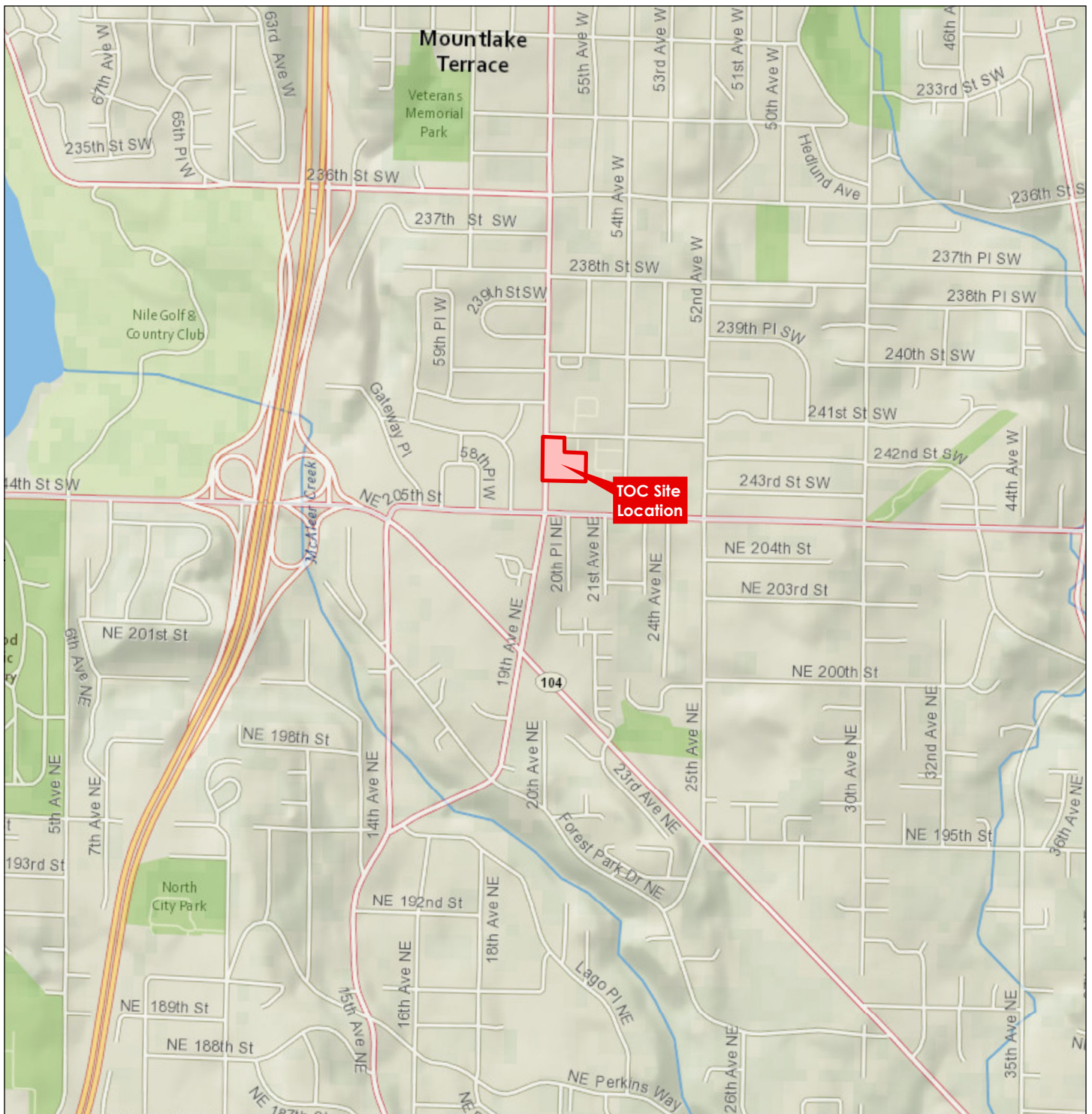
U = Indicates the compound was undetected at the reported concentration.

LIST OF PROPERTIES:

TOC = 24205 56th Avenue West, Mountlake Terrace WA

FIGURES

- 1 Project Location
- 2 Site Map
- 3 Locations of Wells and Remediation Systems
- 4 Groundwater Elevation Contours, Shallow Zone (System Off), May 26, 2016
- 5a Groundwater Elevation Contours, Intermediate Zone (System Off), May 26, 2016
- 5b Groundwater Elevation Contours, Intermediate Zone (System On), May 12, 2016
- 5c Groundwater Elevation Difference between System On and System Off, Intermediate Zone, May 2016.
- 6 Groundwater Elevation Contours, Deep Zone (System Off), May 26, 2016
- 7 GRPH Concentrations in Groundwater, Shallow Zone, Second Quarter 2016
- 8 Benzene Concentrations in Groundwater, Shallow Zone, Second Quarter 2016
- 9 GRPH Concentrations in Groundwater, Intermediate Zone, Second Quarter 2016
- 10 Benzene Concentrations in Groundwater, Intermediate Zone, Second Quarter 2016



Legend
 TOC Site Location

Map Details
 1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 2. Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

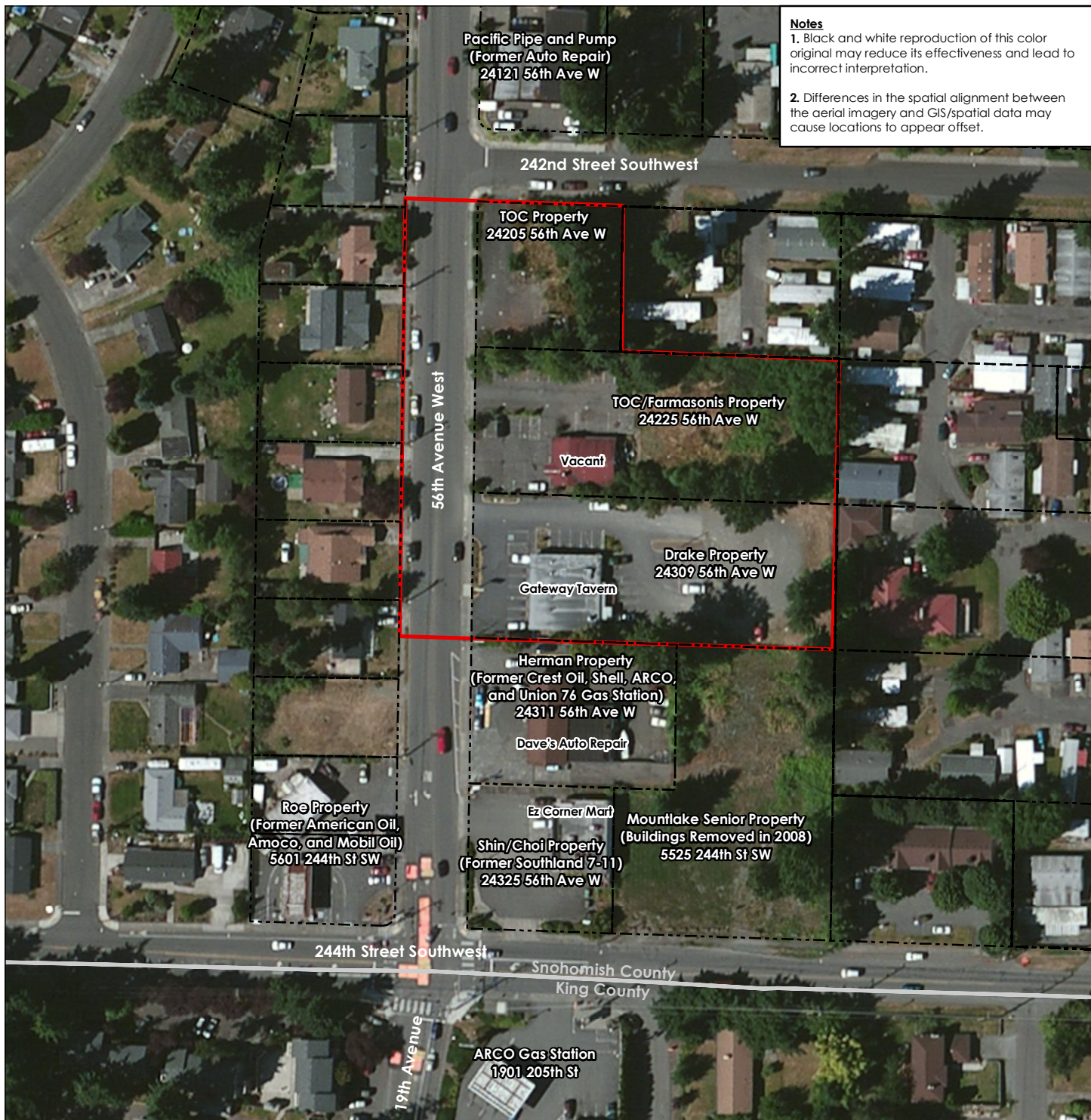
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Figure No. **1**
 Title **Project Location**

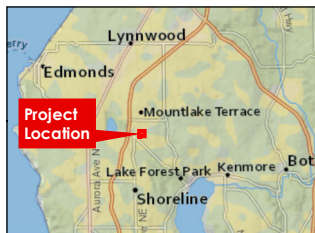
Client/Project
 TOC Holdings Co.
 Facility 01-176

Project Location 185703259
 24205-24309 56th Avenue West Prepared by NF
 Mountlake Terrace, Technical Review by RB
 Washington Independent Review by MM





Notes
 1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
 2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.



- Legend**
- Parcel Boundary
 - Site Boundary
 - County Boundary

Map Details
 1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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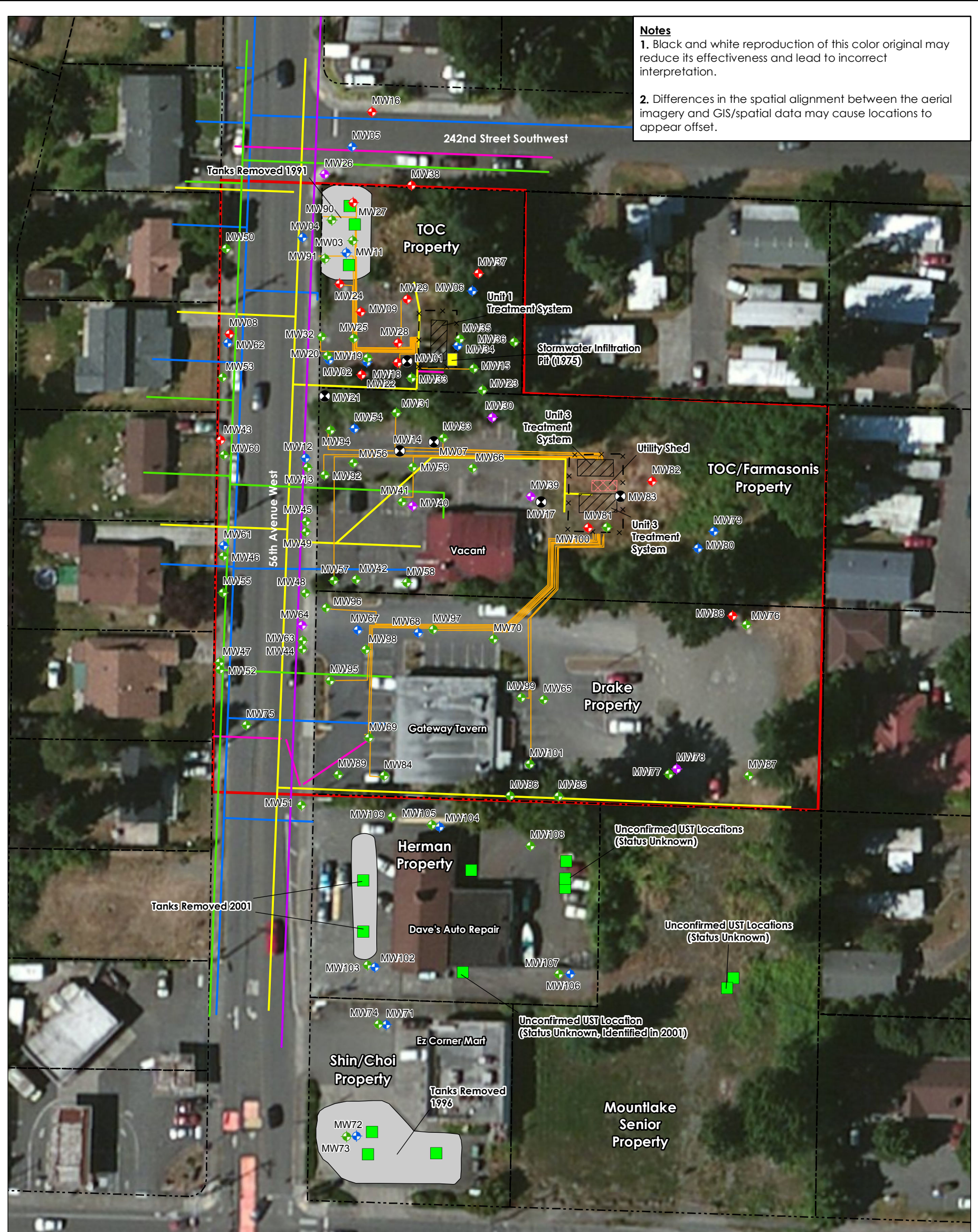
Figure No. **2**
 Title **Site Map**

Client/Project TOC Holdings Co.

Facility 01-176

Project Location 185703259
 24205-24309 56th Avenue West Prepared by NF
 Mountlake Terrace, Technical Review by RB
 Washington, Independent Review by MM





Notes
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Map Details
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- Legend**
- ◆ Shallow Groundwater Zone Monitoring Well Location
 - ◆ Groundwater Zone Intersect Monitoring Well Location (well screen intersects two groundwater zones)
 - ◆ Intermediate Groundwater Zone Monitoring Well Location
 - ◆ Deep Groundwater Zone Monitoring Well Location
 - ⊗ Abandoned Monitoring Well Location
 - Historic Underground Storage Tank
 - Fiber Optic Line
 - Gas Line
 - Sewer Line
 - Stormwater Line
 - Water Line
 - Remediation System Piping
 - - - Parcel Boundary
 - ▭ Site Boundary
 - ▭ Estimated Historic Soil Excavation
 - ▭ Stormwater Pit
 - ▭ Remediation System Compound
 - ⊠ Compound Fence
 - ⊠ Equipment Shed

Figure No. **3**
 Title **Locations of Wells and Remediation Systems**

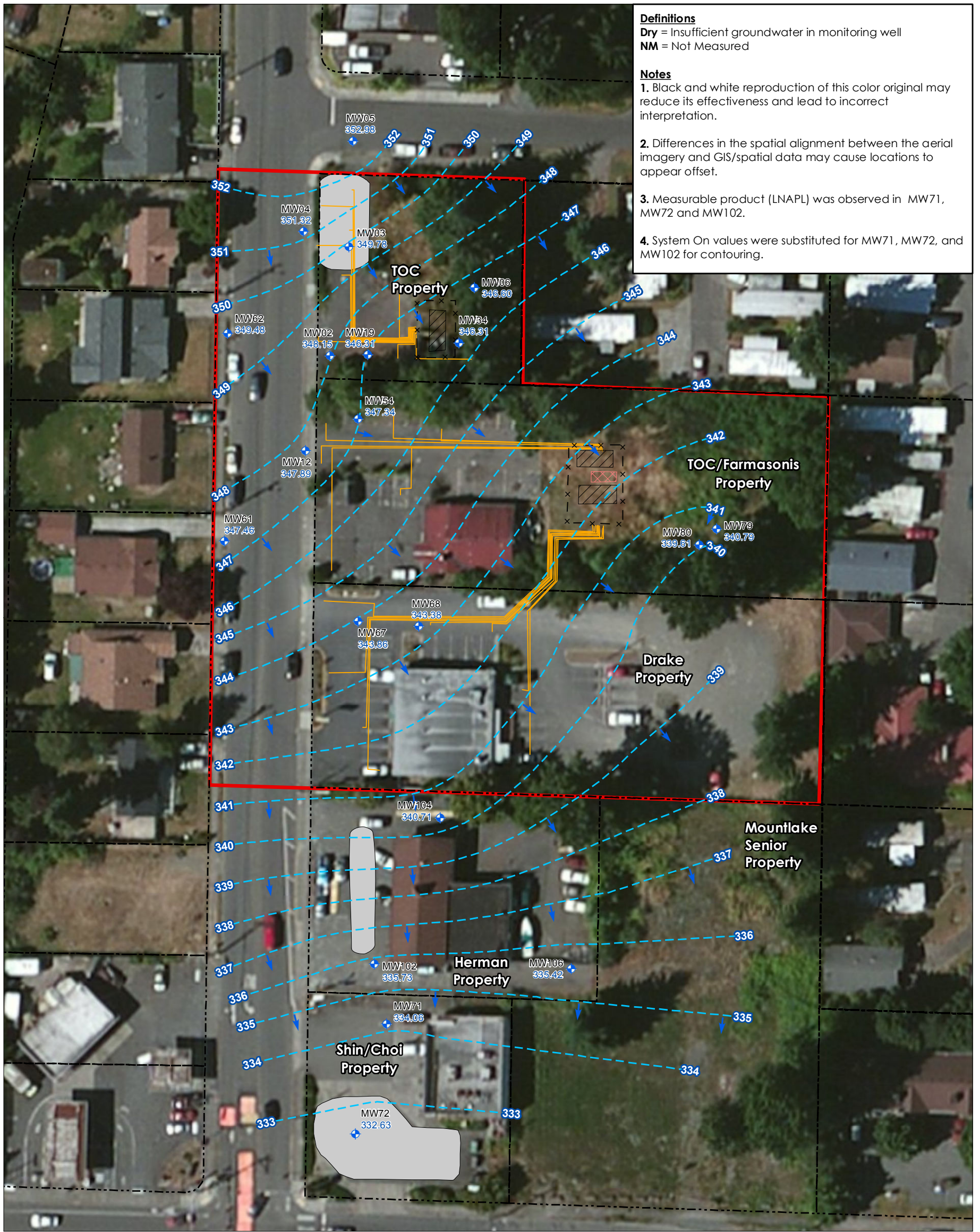
Client/Project
 TOC Holdings Co.
 Facility 01-176

Project Location
 24205-24309 56th Avenue West
 Mountlake Terrace, Washington

185703259
 Prepared by NF
 Technical Review by RB
 Independent Review by MM

0 60 120 Feet

1:720 (At Original document size of 11x17)



Definitions
Dry = Insufficient groundwater in monitoring well
NM = Not Measured

Notes
 1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
 2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
 3. Measurable product (LNAPL) was observed in MW71, MW72 and MW102.
 4. System On values were substituted for MW71, MW72, and MW102 for contouring.



Map Details
 1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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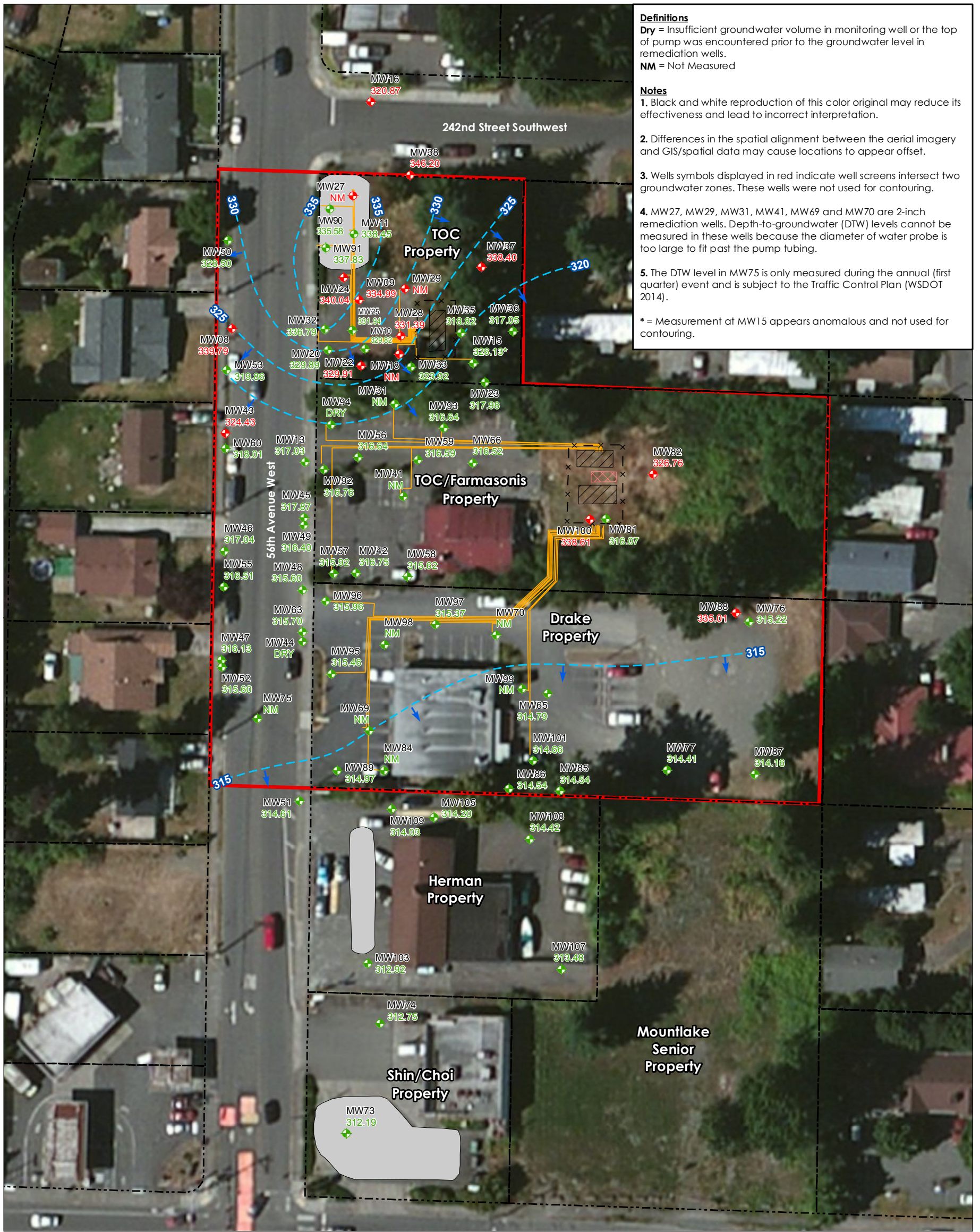
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- Legend**
- MW72 331.32 Shallow Groundwater Zone Monitoring Well Location & Groundwater Elevation (feet, mean sea level)
 - Groundwater Elevation Contour (feet, mean sea level)
 - Approximate Groundwater Flow Direction
 - Remediation System Piping
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **4**
 Title **Groundwater Elevation Contours, Shallow Zone (System Off), May 26, 2016**
 Client/Project TOC Holdings Co. Facility 01-176
 Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington
 185703259 Prepared by NF Technical Review by RB Independent Review by MM

0 60 120 Feet
 1:720 (At Original document size of 11x17)





Definitions
Dry = Insufficient groundwater volume in monitoring well or the top of pump was encountered prior to the groundwater level in remediation wells.
NM = Not Measured

Notes

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
3. Wells symbols displayed in red indicate well screens intersect two groundwater zones. These wells were not used for contouring.
4. MW27, MW29, MW31, MW41, MW69 and MW70 are 2-inch remediation wells. Depth-to-groundwater (DTW) levels cannot be measured in these wells because the diameter of water probe is too large to fit past the pump tubing.
5. The DTW level in MW75 is only measured during the annual (first quarter) event and is subject to the Traffic Control Plan (WSDOT 2014).

* = Measurement at MW15 appears anomalous and not used for contouring.



Map Details

1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community. Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

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- Legend**
- MW72 331.32 Intermediate Groundwater Zone Monitoring Well Location & Groundwater Elevation (feet, mean sea level)
 - MW72 331.32 Groundwater Zone Intersect Monitoring Well Location (well screen intersects two groundwater zones) & Groundwater Elevation (feet, mean sea level)
 - Groundwater Elevation Contour (feet, mean sea level)
 - Approximate Groundwater Flow Direction
 - Remediation System Piping
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **5a**

Title **Groundwater Elevation Contours, Intermediate Zone (System Off), May 26, 2016**

Client/Project TOC Holdings Co. Facility 01-176

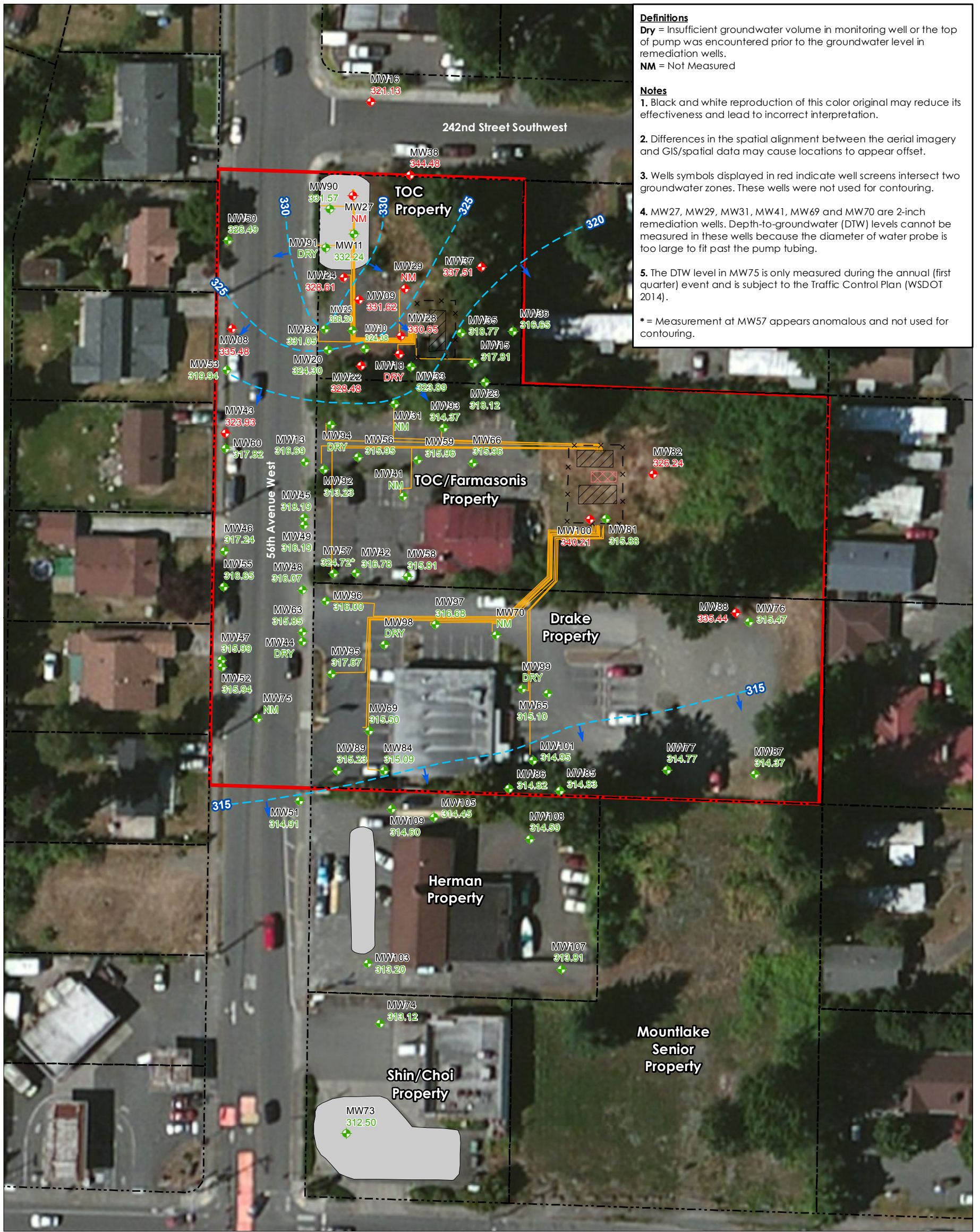
Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington

185703259
 Prepared by NF
 Technical Review by RB
 Independent Review by MM

0 60 120 Feet

1:720 (At Original document size of 11x17)





Definitions
Dry = Insufficient groundwater volume in monitoring well or the top of pump was encountered prior to the groundwater level in remediation wells.
NM = Not Measured

Notes
 1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
 2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
 3. Wells symbols displayed in red indicate well screens intersect two groundwater zones. These wells were not used for contouring.
 4. MW27, MW29, MW31, MW41, MW69 and MW70 are 2-inch remediation wells. Depth-to-groundwater (DTW) levels cannot be measured in these wells because the diameter of water probe is too large to fit past the pump tubing.
 5. The DTW level in MW75 is only measured during the annual (first quarter) event and is subject to the Traffic Control Plan (WSDOT 2014).
 * = Measurement at MW57 appears anomalous and not used for contouring.



Map Details
 1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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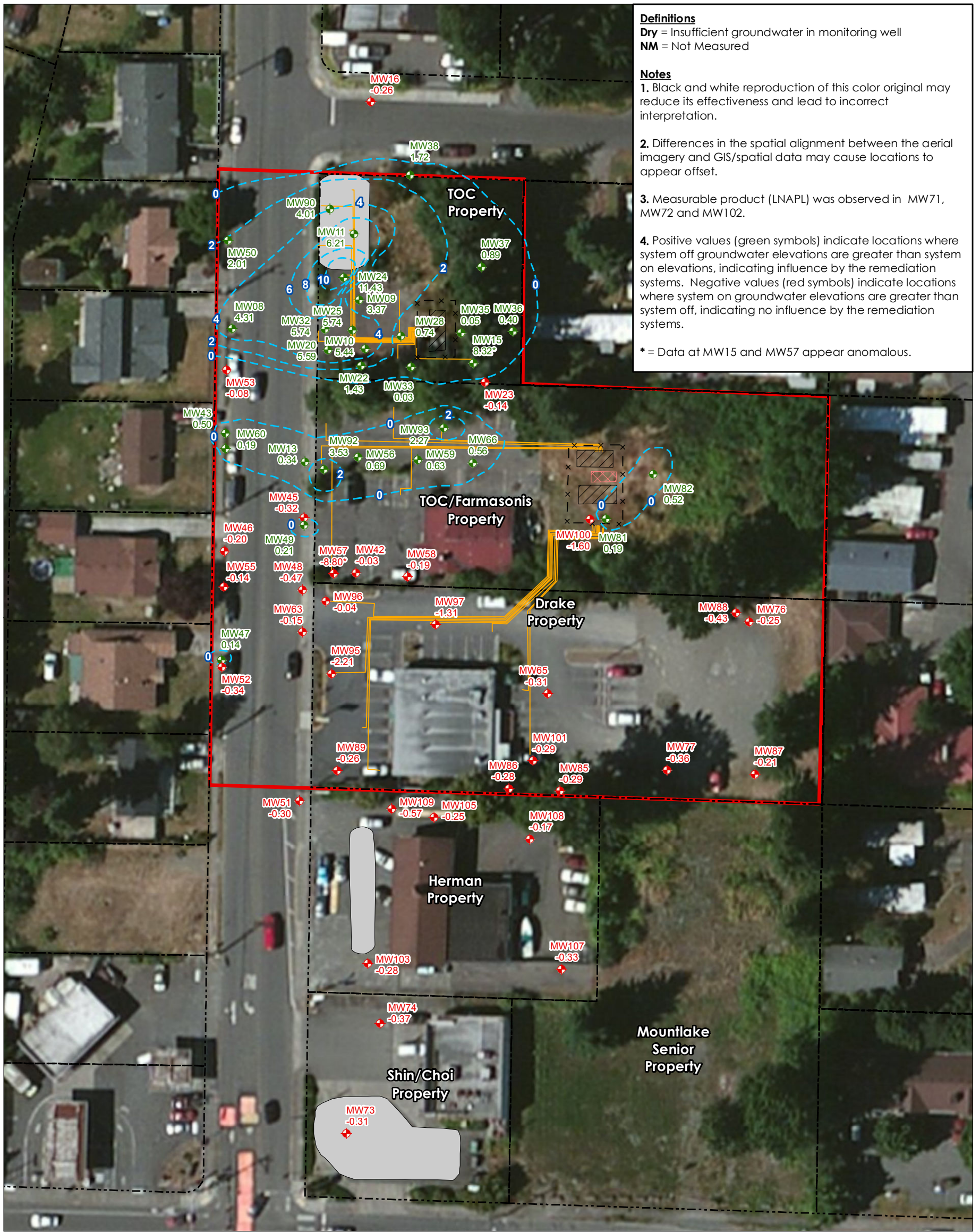
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- Legend**
- MW72 331.32 Intermediate Groundwater Zone Monitoring Well Location & Groundwater Elevation (feet, mean sea level)
 - MW72 331.32 Groundwater Zone Intersect Monitoring Well Location (well screen intersects two groundwater zones) & Groundwater Elevation (feet, mean sea level)
 - Groundwater Elevation Contour (feet, mean sea level)
 - Approximate Groundwater Flow Direction
 - Remediation System Piping
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **5b**
 Title **Groundwater Elevation Contours, Intermediate Zone (System On), May 12, 2016**
 Client/Project TOC Holdings Co. Facility 01-176
 Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington
 185703259 Prepared by NF Technical Review by RB Independent Review by MM

0 60 120 Feet
 1:720 (At Original document size of 11x17)





Definitions
Dry = Insufficient groundwater in monitoring well
NM = Not Measured

Notes

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
3. Measurable product (LNAPL) was observed in MW71, MW72 and MW102.
4. Positive values (green symbols) indicate locations where system off groundwater elevations are greater than system on elevations, indicating influence by the remediation systems. Negative values (red symbols) indicate locations where system on groundwater elevations are greater than system off, indicating no influence by the remediation systems.

* = Data at MW15 and MW57 appear anomalous.



Map Details

1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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- Legend**
- ◆ Intermediate Groundwater Zone Monitoring Well Location & Negative Groundwater Elevation Comparison (System Off - System On, feet)
 - ◆ Intermediate Groundwater Zone Monitoring Well Location & Positive Groundwater Elevation Comparison (System Off - System On, feet)
 - System On/Off Comparison Contour (System Off - System On, feet)
 - Remediation System Piping
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **5c**

Title **Comparison of System-On and System-Off Groundwater Elevations May 2016**

Client/Project TOC Holdings Co. Facility 01-176

Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington

185703259
 Prepared by NF
 Technical Review by RB
 Independent Review by MM

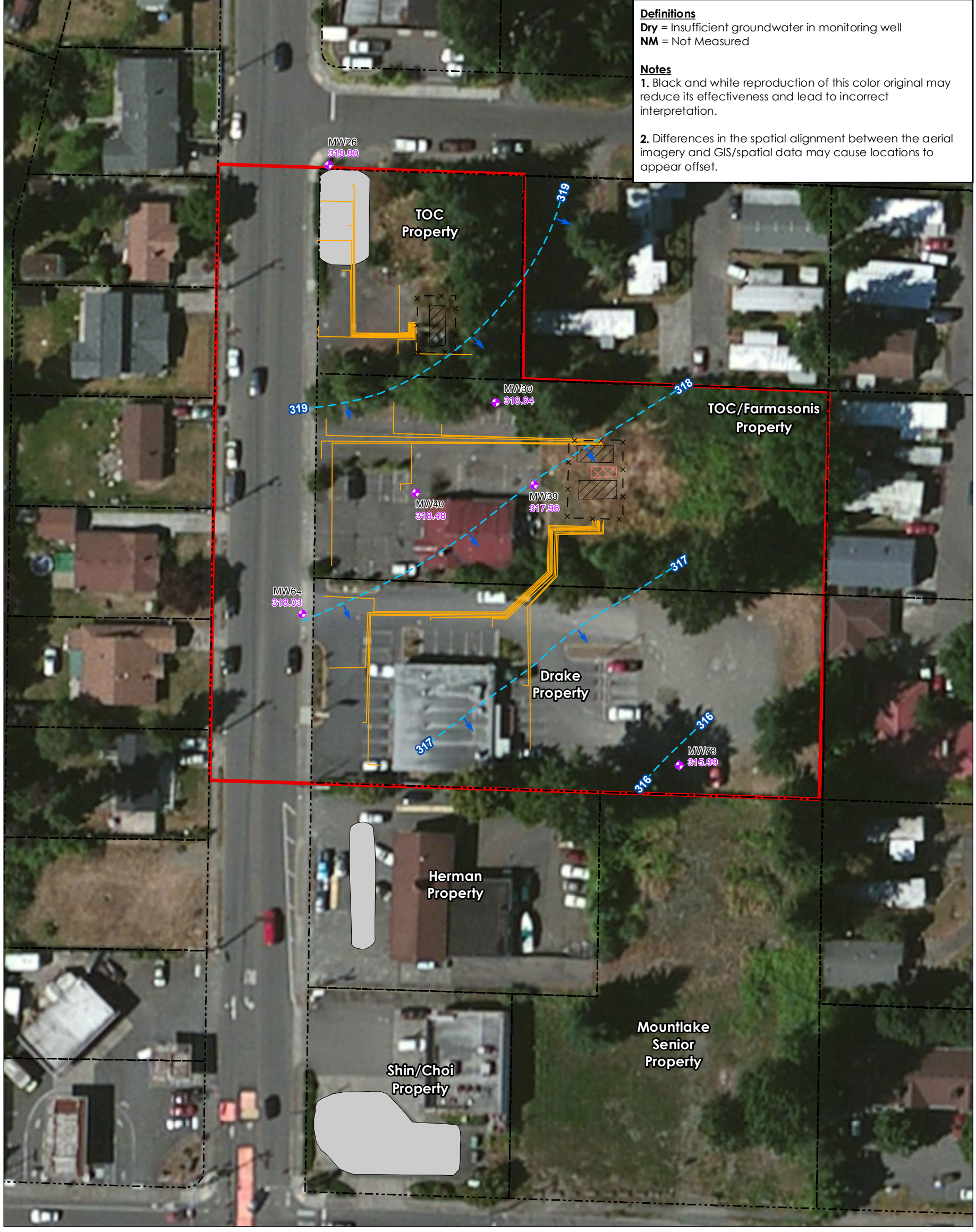
0 60 120 Feet

1:720 (At Original document size of 11x17)



Definitions
Dry = Insufficient groundwater in monitoring well
NM = Not Measured

Notes
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
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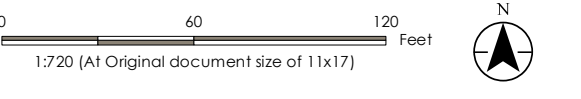
Map Details
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2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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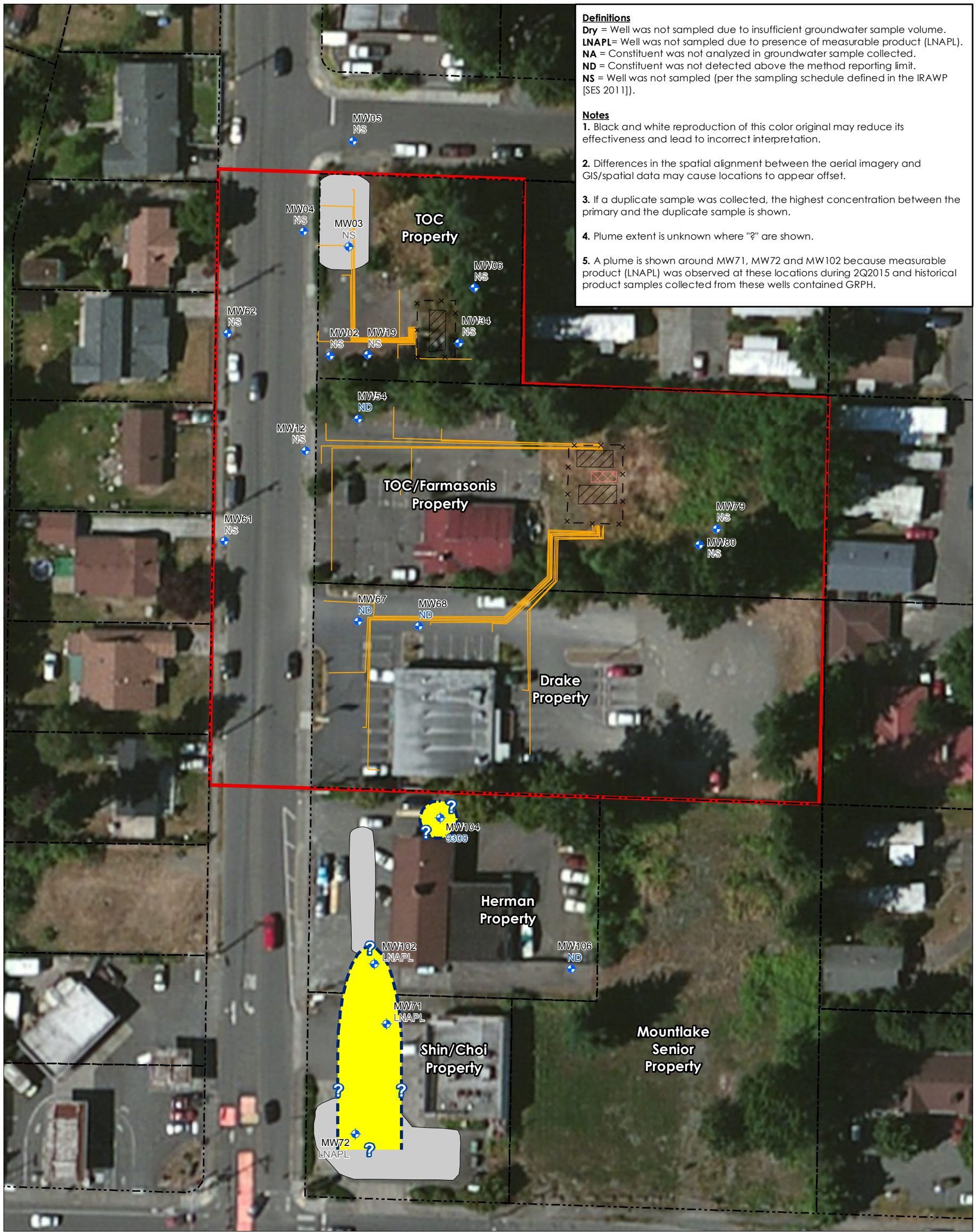
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- Legend**
- MW72 331.32 Deep Groundwater Zone Monitoring Well Location & Groundwater Elevation (feet, mean sea level)
 - Groundwater Elevation Contour (feet, mean sea level)
 - Approximate Groundwater Flow Direction
 - Remediation System Piping
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **6**
 Title **Groundwater Elevation Contours, Deep Zone (System Off), May 26, 2016**

Client/Project TOC Holdings Co. Facility 01-176
 Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington
 185703259 Prepared by NF Technical Review by RB Independent Review by MM





Definitions
Dry = Well was not sampled due to insufficient groundwater sample volume.
LNAPL = Well was not sampled due to presence of measurable product (LNAPL).
NA = Constituent was not analyzed in groundwater sample collected.
ND = Constituent was not detected above the method reporting limit.
NS = Well was not sampled (per the sampling schedule defined in the IRAWP [SES 2011]).

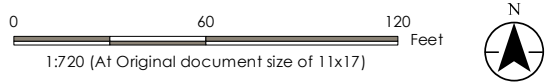
Notes
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
3. If a duplicate sample was collected, the highest concentration between the primary and the duplicate sample is shown.
4. Plume extent is unknown where "?" are shown.
5. A plume is shown around MW71, MW72 and MW102 because measurable product (LNAPL) was observed at these locations during 2Q2015 and historical product samples collected from these wells contained GRPH.

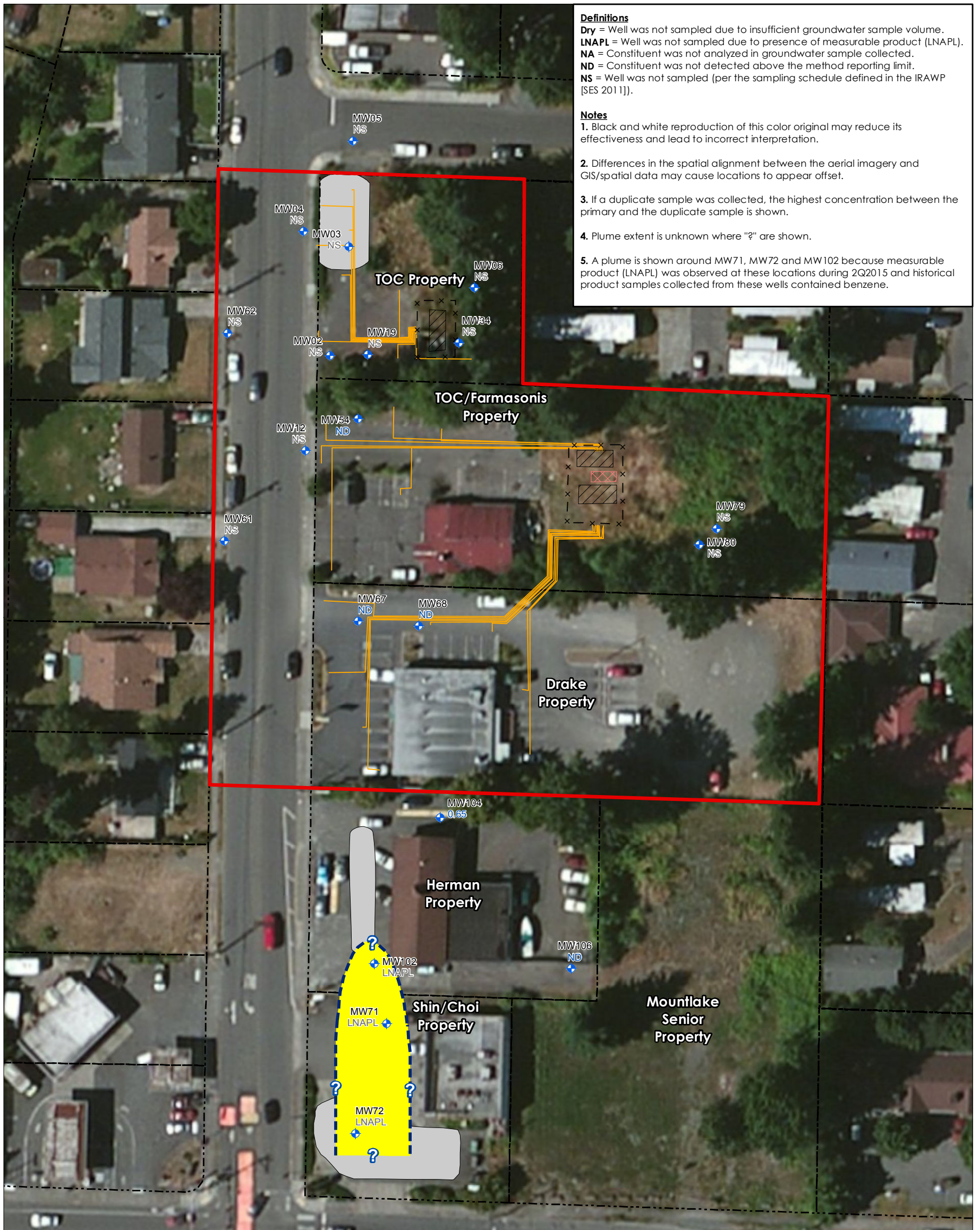


Map Details
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2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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- Legend**
- MW72 Shallow Groundwater Zone Monitoring Well 800 Location & GRPH Concentration (µg/L)
 - Remediation System Piping
 - Sample Concentration exceeds MTCA Method A Cleanup (800 µg/L when GRPH is present)
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **7**
 Title **GRPH Concentrations Shallow Zone, Second Quarter 2016**
 Client/Project TOC Holdings Co. Facility 01-176
 Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington
 185703259
 Prepared by NF
 Technical Review by RB
 Independent Review by MM





Definitions
Dry = Well was not sampled due to insufficient groundwater sample volume.
LNAPL = Well was not sampled due to presence of measurable product (LNAPL).
NA = Constituent was not analyzed in groundwater sample collected.
ND = Constituent was not detected above the method reporting limit.
NS = Well was not sampled (per the sampling schedule defined in the IRAWP [SES 2011]).

Notes
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3. If a duplicate sample was collected, the highest concentration between the primary and the duplicate sample is shown.
4. Plume extent is unknown where "?" are shown.
5. A plume is shown around MW71, MW72 and MW102 because measurable product (LNAPL) was observed at these locations during 2Q2015 and historical product samples collected from these wells contained benzene.

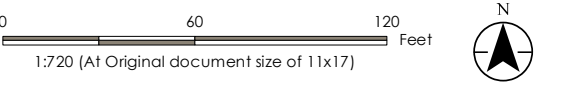


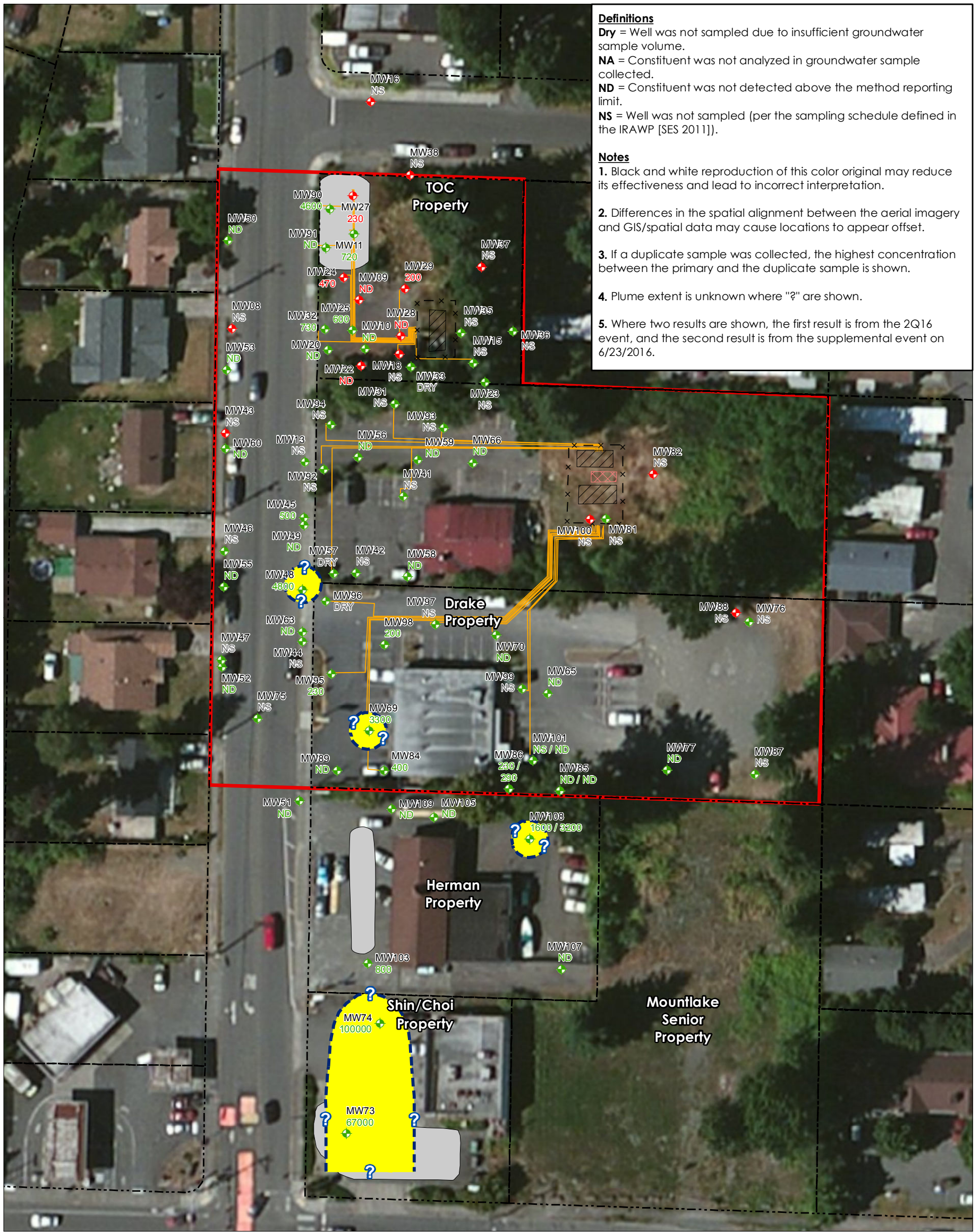
Map Details
1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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- Legend**
- MW72 Shallow Groundwater Zone Monitoring Well Location & Benzene Concentration (µg/L)
 - Remediation System Piping
 - Minimum Preliminary Screening Level for Benzene (5 µg/L; MTCA Method A Cleanup Level)
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **8**
 Title **Benzene Concentrations Shallow Zone, Second Quarter 2016**
 Client/Project TOC Holdings Co. Facility 01-176
 Project Location 24205-24309 56th Avenue West Mountlake Terrace, Washington
 185703259 Prepared by NF Technical Review by RB Independent Review by MM





Definitions
Dry = Well was not sampled due to insufficient groundwater sample volume.
NA = Constituent was not analyzed in groundwater sample collected.
ND = Constituent was not detected above the method reporting limit.
NS = Well was not sampled (per the sampling schedule defined in the IRAWP [SES 2011]).

Notes
 1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
 2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
 3. If a duplicate sample was collected, the highest concentration between the primary and the duplicate sample is shown.
 4. Plume extent is unknown where "?" are shown.
 5. Where two results are shown, the first result is from the 2Q16 event, and the second result is from the supplemental event on 6/23/2016.



Map Details
 1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
 Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

- Legend**
- MW72 Intermediate Groundwater Zone Monitoring Well Location & GRPH Concentration (µg/L)
 - MW72 800 Groundwater Zone Intersect Monitoring Well Location (well screen intersects two groundwater zones) & GRPH Concentration (µg/L)
 - Remediation System Piping
 - Sample Concentration exceeds MTCA Method A Cleanup (800 µg/L when GRPH is present)
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **9**

Title **GRPH Concentrations Intermediate Zone, Second Quarter 2016 and Supplemental Event 6/23/2016**

Client/Project **TOC Holdings Co. Facility 01-176**

Project Location **24205-24309 56th Avenue West Mountlake Terrace, Washington**

185703259
 Prepared by NF
 Technical Review by RB
 Independent Review by MM

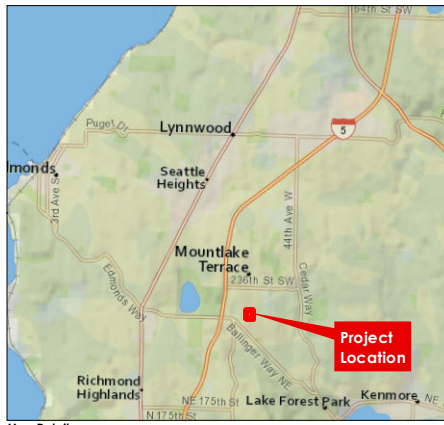
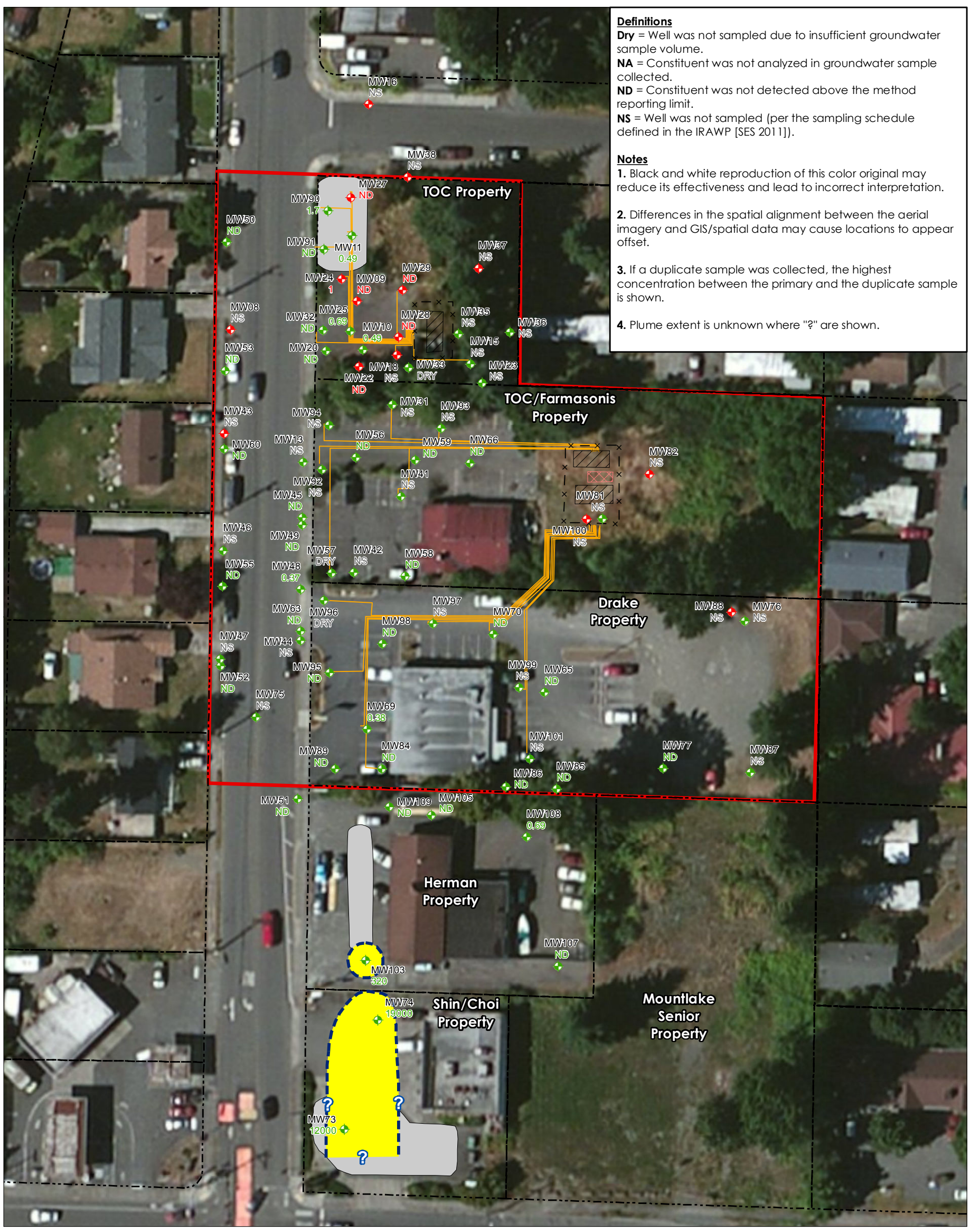
0 60 120 Feet

1:720 (At Original document size of 11x17)



Definitions
Dry = Well was not sampled due to insufficient groundwater sample volume.
NA = Constituent was not analyzed in groundwater sample collected.
ND = Constituent was not detected above the method reporting limit.
NS = Well was not sampled (per the sampling schedule defined in the IRAWP [SES 2011]).

Notes
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
2. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations to appear offset.
3. If a duplicate sample was collected, the highest concentration between the primary and the duplicate sample is shown.
4. Plume extent is unknown where "?" are shown.



Map Details
1. Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
 Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
 Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

- Legend**
- MW72 5 Intermediate Groundwater Zone Monitoring Well Location & Benzene Concentration (µg/L)
 - MW72 5 Groundwater Zone Intersect Monitoring Well Location (well screen intersects two groundwater zones) & Benzene Concentration (µg/L)
 - Remediation System Piping
 - Minimum Preliminary Screening Level for Benzene (5 µg/L; MTC A Method A Cleanup Level)
 - Parcel Boundary
 - Site Boundary
 - Estimated Historic Soil Excavation
 - Remediation System Compound
 - Compound Fence
 - Equipment Shed

Figure No. **10**
 Title **Benzene Concentrations Intermediate Zone, Second Quarter 2016**
 Client/Project **TOC Holdings Co. Facility 01-176**
 Project Location **24205-24309 56th Avenue West Mountlake Terrace, Washington**
 185703259
 Prepared by NF
 Technical Review by RB
 Independent Review by MM

0 60 120 Feet
 1:720 (At Original document size of 11x17)



APPENDIX A

Laboratory Analytical Reports – Groundwater Samples,
Second Quarter 2016 and Supplemental Event, June 23, 2016

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 8, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 17, 2016 from the TOC_01-176, WORFDB8 F&BI 605307 project. There are 41 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner, Rebekah Brooks, Kim Vik
HDC0608R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 17, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605307 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
605307 -01	MW70
605307 -02	MW95
605307 -03	MW98
605307 -04	MW11
605307 -05	MW24
605307 -06	MW27
605307 -07	MW29
605307 -08	MW32
605307 -09	MW90
605307 -10	MW91
605307 -11	Trip Blank

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16
Date Received: 05/17/16
Project: TOC_01-176, WORFDB8 F&BI 605307
Date Extracted: 05/18/16
Date Analyzed: 05/18/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 51-134)
MW70 605307-01	<100	93
MW95 605307-02	230	86
MW98 605307-03	200	92
MW11 605307-04	720	101
MW24 605307-05	470	96
MW27 605307-06	230	95
MW29 605307-07	200	92
MW32 605307-08	730	102
MW90 605307-09	4,600	116
MW91 605307-10	<100	86

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16
Date Received: 05/17/16
Project: TOC_01-176, WORFDB8 F&BI 605307
Date Extracted: 05/18/16
Date Analyzed: 05/18/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate <u>(% Recovery)</u> (Limit 51-134)
Trip Blank 605307-11	<100	93
Method Blank 06-951 MB	<100	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

Date Extracted: 05/19/16

Date Analyzed: 05/19/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 47-140)
MW70 605307-01	540 x	<250	113
MW91 605307-10	200 x	<250	107
Method Blank 06-1014 MB	<50	<250	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW70	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/26/16	Lab ID:	605307-01
Date Analyzed:	06/06/16	Data File:	605307-01.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW29	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/26/16	Lab ID:	605307-07
Date Analyzed:	06/06/16	Data File:	605307-07.064
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW32	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/26/16	Lab ID:	605307-08
Date Analyzed:	06/06/16	Data File:	605307-08.065
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	1.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW90	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/26/16	Lab ID:	605307-09
Date Analyzed:	06/06/16	Data File:	605307-09.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW91	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/26/16	Lab ID:	605307-10
Date Analyzed:	06/06/16	Data File:	605307-10.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/26/16	Lab ID:	I6-340 mb
Date Analyzed:	06/06/16	Data File:	I6-340 mb.059
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW70	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	605307-01
Date Analyzed:	05/20/16	Data File:	605307-01.182
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW29	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	605307-07
Date Analyzed:	05/25/16	Data File:	605307-07.129
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW32	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	605307-08
Date Analyzed:	05/25/16	Data File:	605307-08.130
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	8.53

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW90	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	605307-09
Date Analyzed:	05/25/16	Data File:	605307-09.131
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	21.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW91	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	605307-10
Date Analyzed:	05/25/16	Data File:	605307-10.132
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	1.93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	I6-317 mb
Date Analyzed:	05/19/16	Data File:	I6-317 mb.051
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Lead	<1
------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW70	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-01
Date Analyzed:	05/18/16	Data File:	051820.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	108	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW95	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-02
Date Analyzed:	05/18/16	Data File:	051829.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	3.6
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW98	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-03
Date Analyzed:	05/18/16	Data File:	051830.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	4.0
m,p-Xylene	6.0
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW11	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-04
Date Analyzed:	05/18/16	Data File:	051831.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	0.49
Toluene	5.1
Ethylbenzene	27
m,p-Xylene	120
o-Xylene	41

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW24	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-05
Date Analyzed:	05/18/16	Data File:	051832.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	1.0
Toluene	5.1
Ethylbenzene	2.0
m,p-Xylene	36
o-Xylene	25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW27	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-06
Date Analyzed:	05/18/16	Data File:	051833.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	11
m,p-Xylene	32
o-Xylene	5.9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW29	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-07
Date Analyzed:	05/18/16	Data File:	051834.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	4.6
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW32	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-08
Date Analyzed:	05/18/16	Data File:	051835.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	1.6
Ethylbenzene	1.1
m,p-Xylene	33
o-Xylene	17

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW90	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-09
Date Analyzed:	05/18/16	Data File:	051836.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	1.7
Toluene	150 ve
Ethylbenzene	87
m,p-Xylene	570 ve
o-Xylene	300 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW90	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-09 1/100
Date Analyzed:	05/20/16	Data File:	052014.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<35
Toluene	150
Ethylbenzene	<100
m,p-Xylene	570
o-Xylene	290

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW91	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-10
Date Analyzed:	05/20/16	Data File:	052013.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	2.3
o-Xylene	1.4
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Trip Blank	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	605307-11
Date Analyzed:	05/18/16	Data File:	051838.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/18/16	Lab ID:	06-972 mb
Date Analyzed:	05/18/16	Data File:	051808.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW70	Client: HydroCon
Date Received: 05/17/16	Project: TOC_01-176, WORFDB8 F&BI 605307
Date Extracted: 05/19/16	Lab ID: 605307-01 1/2
Date Analyzed: 05/20/16	Data File: 052006.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	31	160
Benzo(a)anthracene-d12	74	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW91	Client:	HydroCon
Date Received:	05/17/16	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	605307-10 1/2
Date Analyzed:	05/20/16	Data File:	052007.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	95	31	160
Benzo(a)anthracene-d12	67	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605307
Date Extracted:	05/19/16	Lab ID:	06-1036 mb
Date Analyzed:	05/20/16	Data File:	052005.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	31	160
Benzo(a)anthracene-d12	83	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16
Date Received: 05/17/16
Project: TOC_01-176, WORFDB8 F&BI 605307
Date Extracted: 05/26/16
Date Analyzed: 05/26/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as µg/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>EDB</u>
MW70 605307-01	<0.01
Trip Blank 605307-11	<0.01
Method Blank	<0.01

EDB 1,2-Dibromoethane

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605307-04 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	720	690	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	108	100	61-133	8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 605307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	98	98	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	107	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 605307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	105	98	70-130	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	92	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	96	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	89	69-133
Benzene	ug/L (ppb)	50	<0.35	96	76-125
Toluene	ug/L (ppb)	50	<1	93	76-122
Ethylbenzene	ug/L (ppb)	50	<1	96	69-135
m,p-Xylene	ug/L (ppb)	100	<2	96	69-135
o-Xylene	ug/L (ppb)	50	<1	94	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	105	108	64-147	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	96	100	73-132	4
Benzene	ug/L (ppb)	50	103	107	69-134	4
Toluene	ug/L (ppb)	50	91	96	72-122	5
Ethylbenzene	ug/L (ppb)	50	95	99	77-124	4
m,p-Xylene	ug/L (ppb)	100	94	99	83-125	5
o-Xylene	ug/L (ppb)	50	94	98	81-121	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	85	90	67-116	6
Acenaphthylene	ug/L (ppb)	1	80	84	65-119	5
Acenaphthene	ug/L (ppb)	1	84	88	66-118	5
Fluorene	ug/L (ppb)	1	82	85	64-125	4
Phenanthrene	ug/L (ppb)	1	87	90	67-120	3
Anthracene	ug/L (ppb)	1	84	86	65-122	2
Fluoranthene	ug/L (ppb)	1	84	84	65-127	0
Pyrene	ug/L (ppb)	1	88	88	62-130	0
Benz(a)anthracene	ug/L (ppb)	1	89	91	60-118	2
Chrysene	ug/L (ppb)	1	91	92	66-125	1
Benzo(b)fluoranthene	ug/L (ppb)	1	82	82	55-135	0
Benzo(k)fluoranthene	ug/L (ppb)	1	92	90	62-125	2
Benzo(a)pyrene	ug/L (ppb)	1	81	81	58-127	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	74	76	36-142	3
Dibenz(a,h)anthracene	ug/L (ppb)	1	76	64	37-133	17
Benzo(g,h,i)perylene	ug/L (ppb)	1	76	70	34-135	8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16

Date Received: 05/17/16

Project: TOC_01-176, WORFDB8 F&BI 605307

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	110	108	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



Sampler's Name: L. Lumba / W. Rajkovich
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: System Wells
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time

Standard 10 business days
 Rush _____

Rush Charges Authorized by: _____

Sample Disposal: 30 days Return Will Call

Additional Comments: Dissolved lead samples were field filtered and preserved. Trip blank - laboratory supplied

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759

kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Site Name		
						TPH-Gx	8260C BTEX	8260C MTBE	8260C EDC	8011M EDB	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF				
1	MW69			W		X	X	X			X	X						Pump pulled Drake
2	MW70	01A-L	05/13/16	1445	12	X	X	X	X	X	X	X	X	X				Drake
3	MW95	02A-F	05/16/16	1104	6	X	X	X										Drake
4	MW96			W		X	X	X										No water Drake
5	MW98	03A-F	5/16/16	1042	6	X	X	X										Drake
6	MW31			W		X	X							X	X			No water TOC-Farmasonis
7	MW57			W		X	X	X										No water TOC-Farmasonis
8	MW11	04A-F	05/16/16	1350	6	X	X											TOC
9	MW15			W		X	X											Pulled Pump TOC
10	MW24	05A-F	05/16/16	1228	6	X	X											TOC
11	MW27	06A-F	05/16/16	1320	6	X	X											TOC

Friedman & Bruya, Inc.
 3600 1st Avenue West
 Seattle, WA 98147
 Ph. (206) 285-8282

Delivered by:
 Received by:

Signature	Print Name	Time	Date

Samples received at 3 °C



Sampler's Name: <u>L. Nguyen</u> Project Name: <u>TOC Holdings Company</u> Facility Number: <u>01-176 Montlake Terrace</u> Facility Address: <u>System Wells</u> PO Number: _____ EDD Requested: <u>EIM</u>	Requested Turn Around Time <input checked="" type="checkbox"/> Standard 10 business days <input type="checkbox"/> Rush _____ Rush Charges Authorized by: _____ Sample Disposal: <u>30 days</u> Return Will Call
--	---

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759
 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments: *Dissolved lead samples were field filtered and preserved. Trip blank laboratory supplied*

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED											Site Name					
						TPH-Gx	8260C BTEX	8260C MTBE	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF	EDC	8240C	EDB	8241M						
1	MW29	07A-H	05/16/16	1402	W	8	X	X				X	X									TOC
2	MW32	08	05/16/16	1258	W	8	X	X				X	X									TOC
3	MW90	09	05/16/16	1240	W	8	X	X				X	X									TOC
4	MW91	10A-J	05/16/16	1325	W	10	X	X	X	X	X	X	X									TOC
5	Trip Blank	11A-H	05/16/16	1600	W	8	✓	✓	✓								✓	✓				
6																						
7																						
8																						
9																						
10																						Samples received at <u>3</u> °C
11																						

Friedman & Bruya, Inc.
 3001 1st Avenue W
 Seattle, WA 98119-2000
 Ph. (206) 285-8282

Relinquished by: _____
 Received by: _____

Signature	Print Name	Time	Date
_____	_____	_____	5/17/16
_____	_____	_____	5/17/16

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 2, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 20, 2016 from the TOC_01-176, WORFDB8 F&BI 605384 project. There are 28 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner, Rebekah Brooks, Kim Vik
HDC0602R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 20, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605384 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
605384 -01	MW09
605384 -02	MLT-01
605384 -03	MW10
605384 -04	MW20
605384 -05	MLT-02
605384 -06	MW22
605384 -07	MW25
605384 -08	MLT-05
605384 -09	MW28
605384 -10	MLT-04
605384 -11	MW50
605384 -12	MW53
605384 -13	Trip Blank

The 8270D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for dibenz(a,h)anthracene. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16
Date Received: 05/20/16
Project: TOC_01-176, WORFDB8 F&BI 605384
Date Extracted: 05/20/16
Date Analyzed: 05/20/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
MW09 605384-01	<100	107
MLT-01 605384-02	<100	101
MW10 605384-03	<100	106
MW20 605384-04	<100	107
MLT-02 605384-05	<100	100
MW22 605384-06	<100	108
MW25 605384-07	530	107
MLT-05 605384-08	600	110
MW28 605384-09	<100	102
MLT-04 605384-10	<100	105
MW50 605384-11	<100	107

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16
Date Received: 05/20/16
Project: TOC_01-176, WORFDB8 F&BI 605384
Date Extracted: 05/20/16
Date Analyzed: 05/20/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
MW53 605384-12	<100	85
Trip Blank 605384-13	<100	100
Method Blank 06-1002 MB	<100	103

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16
Date Received: 05/20/16
Project: TOC_01-176, WORFDB8 F&BI 605384
Date Extracted: 05/23/16
Date Analyzed: 05/23/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 47-140)
MW20 605384-04	89 x	<250	122
MLT-02 605384-05	86 x	<250	113
Method Blank 06-1042 MB	<50	<250	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW09	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-01
Date Analyzed:	05/20/16	Data File:	052037.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MLT-01	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-02
Date Analyzed:	05/20/16	Data File:	052038.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW10	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-03
Date Analyzed:	05/20/16	Data File:	052040.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW20	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-04
Date Analyzed:	05/20/16	Data File:	052041.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MLT-02	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-05
Date Analyzed:	05/21/16	Data File:	052042.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW22	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-06
Date Analyzed:	05/21/16	Data File:	052043.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW25	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-07
Date Analyzed:	05/21/16	Data File:	052044.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	0.62
Toluene	21
Ethylbenzene	3.4
m,p-Xylene	48
o-Xylene	29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MLT-05	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-08
Date Analyzed:	05/21/16	Data File:	052045.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	0.69
Toluene	22
Ethylbenzene	3.5
m,p-Xylene	49
o-Xylene	29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW28	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-09
Date Analyzed:	05/21/16	Data File:	052046.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MLT-04	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-10
Date Analyzed:	05/21/16	Data File:	052047.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW50	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-11
Date Analyzed:	05/21/16	Data File:	052048.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW53	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-12
Date Analyzed:	05/21/16	Data File:	052049.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Trip Blank	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	605384-13
Date Analyzed:	05/20/16	Data File:	052035.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/20/16	Lab ID:	06-1020 mb
Date Analyzed:	05/20/16	Data File:	052032.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW20	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/23/16	Lab ID:	605384-04 1/2
Date Analyzed:	05/24/16	Data File:	052408.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	31	160
Benzo(a)anthracene-d12	77	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MLT-02	Client: HydroCon
Date Received: 05/20/16	Project: TOC_01-176, WORFDB8 F&BI 605384
Date Extracted: 05/23/16	Lab ID: 605384-05 1/2
Date Analyzed: 05/24/16	Data File: 052409.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	94	31	160
Benzo(a)anthracene-d12	89	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605384
Date Extracted:	05/23/16	Lab ID:	06-1045 mb
Date Analyzed:	05/24/16	Data File:	052407.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	160
Benzo(a)anthracene-d12	87	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605384

Date Extracted: 05/26/16

Date Analyzed: 05/26/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as $\mu\text{g/L}$ (ppb)

Sample ID
Laboratory ID

EDB

Trip Blank
605384-13

<0.01

Method Blank

<0.01

EDB

1,2-Dibromoethane

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605384

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605374-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	94	70-119

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605384

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	113	112	61-133	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605384

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605384-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	100	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	93	69-133
Benzene	ug/L (ppb)	50	<0.35	100	76-125
Toluene	ug/L (ppb)	50	<1	96	76-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
m,p-Xylene	ug/L (ppb)	100	<2	98	69-135
o-Xylene	ug/L (ppb)	50	<1	96	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	99	99	64-147	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	91	91	73-132	0
Benzene	ug/L (ppb)	50	100	100	69-134	0
Toluene	ug/L (ppb)	50	96	97	72-122	1
Ethylbenzene	ug/L (ppb)	50	97	99	77-124	2
m,p-Xylene	ug/L (ppb)	100	97	98	83-125	1
o-Xylene	ug/L (ppb)	50	95	96	81-121	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605384

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	85	83	67-116	2
Acenaphthylene	ug/L (ppb)	1	83	82	65-119	1
Acenaphthene	ug/L (ppb)	1	83	84	66-118	1
Fluorene	ug/L (ppb)	1	83	82	64-125	1
Phenanthrene	ug/L (ppb)	1	85	84	67-120	1
Anthracene	ug/L (ppb)	1	83	82	65-122	1
Fluoranthene	ug/L (ppb)	1	80	79	65-127	1
Pyrene	ug/L (ppb)	1	81	86	62-130	6
Benz(a)anthracene	ug/L (ppb)	1	89	91	60-118	2
Chrysene	ug/L (ppb)	1	88	89	66-125	1
Benzo(b)fluoranthene	ug/L (ppb)	1	82	84	55-135	2
Benzo(k)fluoranthene	ug/L (ppb)	1	86	88	62-125	2
Benzo(a)pyrene	ug/L (ppb)	1	82	84	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	74	83	36-142	11
Dibenz(a,h)anthracene	ug/L (ppb)	1	68	88	37-133	26 vo
Benzo(g,h,i)perylene	ug/L (ppb)	1	72	88	34-135	20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605384

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	110	108	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



ME 5/20/16

Sampler's Name: L. Namba, W. Radford
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: TOC Property
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time

Standard 10 business days
 Rush _____

Rush Charges Authorized by: _____

Sample Disposal: 30 days Return Will Call

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759

 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments:

	Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Notes	
							TPH-Gx	8260C BTEX	8260C MTBE	TPH-Dx	8270SIM PAHs							
1	MW09	01 A-F	05/18/16	1143	W	6	X	X										
2	MLT-01	02	05/18/16	1158	W	6	X	X										
3	MW10	03	05/18/16	1200	W	6	X	X										
4	MW20	04 A-H	05/18/16	1430	W	8	X	X	X	X	X							
5	MLT-02	05	05/18/16	1445	W	8	X	X	X	X	X							
6	MW22	06 A-F	05/18/16	1120	W	6	X	X										
7	MW25	07	05/18/16	1411	W	6	X	X										
8	MLT-05	08	05/18/16	1426	W	6	X	X										
9	MW28	09	05/17/16	1552	W	6	X	X										
10	MLT-04	10	05/17/16	1607	W	6	X	X										
11	MW33				W		X	X										

Samples received at 3 °C

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

Signature	Print Name	Time	Date
<i>[Signature]</i>	LARRY NAMBA	0909	20 May 2016
<i>[Signature]</i>	ELIZABETH RADFORD	0909	20 May 2016

605384



MW5/20/16

Sampler's Name: L. Namba, W. Rajkovich
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: TOC Property
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time
 Standard 10 business days
 Rush _____
 Rush Charges Authorized by: _____
 Sample Disposal: 30 days Return Will Call

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759
 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments:

	Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED						Notes	
							TPH-Gx	8260C BTEX	EDB	EDC	MTBE			
1	MW50	11 A-F	05/18/16	1250	W	6	X	X						
2	MW53	12 ✓	05/18/16	1401	W	6	X	X						
3	Trip Blank	13 A-D	05/18/16	1600	W	4	✓	✓	✓	✓	✓			
4														
5														
6														
7														
8														
9														
10														
11														Samples received at <u>3</u> °C

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

	Signature	Print Name	Time	Date
Relinquished by:	<i>[Signature]</i>	Larry Namba	0909	20 May 2016
Received by:	<i>[Signature]</i>	Elizabeth Radford	0909	20 May 2016
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 9, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 20, 2016 from the TOC_01-176, WORFDB8 F&BI 605385 project. There are 29 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner, Rebekah Brooks, Kim Vik
HDC0609R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 20, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605385 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
605385 -01	MW73
605385 -02	MW74

The 8270D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for dibenz(a,h)anthracene. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16
Date Received: 05/20/16
Project: TOC_01-176, WORFDB8 F&BI 605385
Date Extracted: 05/23/16
Date Analyzed: 05/23/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate <u>(% Recovery)</u> (Limit 51-134)
MW73 605385-01 1/10	67,000	116
MW74 605385-02 1/10	100,000	115
Method Blank 06-1004 MB	<100	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16
Date Received: 05/20/16
Project: TOC_01-176, WORFDB8 F&BI 605385
Date Extracted: 05/23/16
Date Analyzed: 05/23/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 47-140)
MW73 605385-01	3,300 x	<250	100
MW74 605385-02	5,400 x	450 x	84
Method Blank 06-1042 MB	<50	<250	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW73	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/25/16	Lab ID:	605385-01
Date Analyzed:	06/07/16	Data File:	605385-01.051
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	4.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW74	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/25/16	Lab ID:	605385-02
Date Analyzed:	06/07/16	Data File:	605385-02.052
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	5.47

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/25/16	Lab ID:	I6-334 mb
Date Analyzed:	06/03/16	Data File:	I6-334 mb.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW73	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/26/16	Lab ID:	605385-01
Date Analyzed:	06/06/16	Data File:	605385-01.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW74	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/26/16	Lab ID:	605385-02
Date Analyzed:	06/06/16	Data File:	605385-02.072
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	5.17

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/26/16	Lab ID:	I6-340 mb
Date Analyzed:	06/06/16	Data File:	I6-340 mb.059
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW73	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/20/16	Lab ID:	605385-01
Date Analyzed:	05/21/16	Data File:	052050.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	57	121
Toluene-d8	110	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	5.9
1,2-Dichloroethane (EDC)	<1
Benzene	1,300 ve
Toluene	1,100 ve
Ethylbenzene	670 ve
m,p-Xylene	2,100 ve
o-Xylene	1,300 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW73	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/20/16	Lab ID:	605385-01 1/500
Date Analyzed:	05/24/16	Data File:	052427.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<500
1,2-Dichloroethane (EDC)	<500
Benzene	12,000
Toluene	4,000
Ethylbenzene	2,300
m,p-Xylene	7,200
o-Xylene	3,100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW74	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/20/16	Lab ID:	605385-02
Date Analyzed:	05/21/16	Data File:	052051.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	57	121
Toluene-d8	112	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	450 ve
1,2-Dichloroethane (EDC)	<1
Benzene	1,700 ve
Toluene	2,400 ve
Ethylbenzene	680 ve
m,p-Xylene	2,100 ve
o-Xylene	1,100 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW74	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/20/16	Lab ID:	605385-02 1/10
Date Analyzed:	05/25/16	Data File:	052509.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	420
1,2-Dichloroethane (EDC)	<10
Benzene	7,300 ve
Toluene	8,800 ve
Ethylbenzene	1,700 ve
m,p-Xylene	5,700 ve
o-Xylene	1,800 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW74	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/20/16	Lab ID:	605385-02 1/500
Date Analyzed:	05/24/16	Data File:	052428.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	107	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<500
1,2-Dichloroethane (EDC)	<500
Benzene	19,000
Toluene	18,000
Ethylbenzene	1,800
m,p-Xylene	6,100
o-Xylene	1,800

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/20/16	Lab ID:	06-1020 mb
Date Analyzed:	05/20/16	Data File:	052032.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW73	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/23/16	Lab ID:	605385-01 1/20
Date Analyzed:	05/24/16	Data File:	052410.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	99 d	31	160
Benzo(a)anthracene-d12	79 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	250 ve
Acenaphthylene	<0.6
Acenaphthene	<0.6
Fluorene	<0.6
Phenanthrene	<0.6
Anthracene	<0.6
Fluoranthene	<0.6
Pyrene	<0.6
Benz(a)anthracene	<0.6
Chrysene	<0.6
Benzo(a)pyrene	<0.6
Benzo(b)fluoranthene	<0.6
Benzo(k)fluoranthene	<0.6
Indeno(1,2,3-cd)pyrene	<0.6
Dibenz(a,h)anthracene	<0.6
Benzo(g,h,i)perylene	<0.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW73	Client: HydroCon
Date Received: 05/20/16	Project: TOC_01-176, WORFDB8 F&BI 605385
Date Extracted: 05/23/16	Lab ID: 605385-01 1/200
Date Analyzed: 05/25/16	Data File: 052530.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	365 d	31	160
Benzo(a)anthracene-d12	108 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	340
Acenaphthylene	<6
Acenaphthene	<6
Fluorene	<6
Phenanthrene	<6
Anthracene	<6
Fluoranthene	<6
Pyrene	<6
Benz(a)anthracene	<6
Chrysene	<6
Benzo(a)pyrene	<6
Benzo(b)fluoranthene	<6
Benzo(k)fluoranthene	<6
Indeno(1,2,3-cd)pyrene	<6
Dibenz(a,h)anthracene	<6
Benzo(g,h,i)perylene	<6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW74	Client: HydroCon
Date Received: 05/20/16	Project: TOC_01-176, WORFDB8 F&BI 605385
Date Extracted: 05/23/16	Lab ID: 605385-02 1/20
Date Analyzed: 05/24/16	Data File: 052411.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	107 d	31	160
Benzo(a)anthracene-d12	79 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	170 ve
Acenaphthylene	<0.6
Acenaphthene	<0.6
Fluorene	<0.6
Phenanthrene	<0.6
Anthracene	<0.6
Fluoranthene	<0.6
Pyrene	<0.6
Benz(a)anthracene	<0.6
Chrysene	<0.6
Benzo(a)pyrene	<0.6
Benzo(b)fluoranthene	<0.6
Benzo(k)fluoranthene	<0.6
Indeno(1,2,3-cd)pyrene	<0.6
Dibenz(a,h)anthracene	<0.6
Benzo(g,h,i)perylene	<0.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW74	Client:	HydroCon
Date Received:	05/20/16	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/23/16	Lab ID:	605385-02 1/200
Date Analyzed:	05/25/16	Data File:	052531.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	346 d	31	160
Benzo(a)anthracene-d12	93 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	220
Acenaphthylene	<6
Acenaphthene	<6
Fluorene	<6
Phenanthrene	<6
Anthracene	<6
Fluoranthene	<6
Pyrene	<6
Benz(a)anthracene	<6
Chrysene	<6
Benzo(a)pyrene	<6
Benzo(b)fluoranthene	<6
Benzo(k)fluoranthene	<6
Indeno(1,2,3-cd)pyrene	<6
Dibenz(a,h)anthracene	<6
Benzo(g,h,i)perylene	<6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605385
Date Extracted:	05/23/16	Lab ID:	06-1045 mb
Date Analyzed:	05/24/16	Data File:	052407.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	160
Benzo(a)anthracene-d12	87	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16
Date Received: 05/20/16
Project: TOC_01-176, WORFDB8 F&BI 605385
Date Extracted: 05/26/16
Date Analyzed: 05/26/16 and 05/27/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as $\mu\text{g/L}$ (ppb)

<u>Sample ID</u> Laboratory ID	<u>EDB</u>
MW73 605385-01	0.20
MW74 605385-02	2.4
Method Blank	<0.01

EDB 1,2-Dibromoethane

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605377-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	93	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	113	112	61-133	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 605398-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	4.67	95	97	70-130	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	103	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 605307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	98	98	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	107	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605384-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	100	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	93	69-133
Benzene	ug/L (ppb)	50	<0.35	100	76-125
Toluene	ug/L (ppb)	50	<1	96	76-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
m,p-Xylene	ug/L (ppb)	100	<2	98	69-135
o-Xylene	ug/L (ppb)	50	<1	96	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	99	99	64-147	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	91	91	73-132	0
Benzene	ug/L (ppb)	50	100	100	69-134	0
Toluene	ug/L (ppb)	50	96	97	72-122	1
Ethylbenzene	ug/L (ppb)	50	97	99	77-124	2
m,p-Xylene	ug/L (ppb)	100	97	98	83-125	1
o-Xylene	ug/L (ppb)	50	95	96	81-121	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	85	83	67-116	2
Acenaphthylene	ug/L (ppb)	1	83	82	65-119	1
Acenaphthene	ug/L (ppb)	1	83	84	66-118	1
Fluorene	ug/L (ppb)	1	83	82	64-125	1
Phenanthrene	ug/L (ppb)	1	85	84	67-120	1
Anthracene	ug/L (ppb)	1	83	82	65-122	1
Fluoranthene	ug/L (ppb)	1	80	79	65-127	1
Pyrene	ug/L (ppb)	1	81	86	62-130	6
Benz(a)anthracene	ug/L (ppb)	1	89	91	60-118	2
Chrysene	ug/L (ppb)	1	88	89	66-125	1
Benzo(b)fluoranthene	ug/L (ppb)	1	82	84	55-135	2
Benzo(k)fluoranthene	ug/L (ppb)	1	86	88	62-125	2
Benzo(a)pyrene	ug/L (ppb)	1	82	84	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	74	83	36-142	11
Dibenz(a,h)anthracene	ug/L (ppb)	1	68	88	37-133	26 vo
Benzo(g,h,i)perylene	ug/L (ppb)	1	72	88	34-135	20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/20/16

Project: TOC_01-176, WORFDB8 F&BI 605385

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	110	108	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

005385



ME 5/20/16

Sampler's Name: L. Namba, W. Radford
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: SHIN/CHOI
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time
 Standard 10 business days
 Rush _____
 Rush Charges Authorized by: _____
 Sample Disposal: 30 days Return Will Call

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759

 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments:

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Notes
						TPH-Gx	8260C BTEX	8260C MTBE	8260C EDC	8011M EDB	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF		
1	MW71			W		X	X	X	X	X	X	X	X	X		Caution possible product 2.31' Prod
2	MW72			W		X	X	X	X	X	X	X	X	X		Caution possible product 0.72' Prod
3	MW73 01A-L 05/17/16	05/17/16	1350	W	12	X	X	X	X	X	X	X	X	X		
4	MW74 02 A-L	05/17/16	1340	W	12	X	X	X	X	X	X	X	X	X		
5	Frip Blank	05/17/16	1600	W	4											
6																
7																
8																
9																
10																Samples received at <u>3</u> °C
11																

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

Signature	Print Name	Time	Date
<i>[Signature]</i>	Larry Namba	0909	20 May 2016
<i>[Signature]</i>	Ediz Radford	0909	20 May 2016
Relinquished by:			
Received by:			
Relinquished by:			
Received by:			

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 9, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 24, 2016 from the TOC_01-176, WORFDB8 F&BI 605426 project. There are 63 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rebekah Brooks, Allison Greiner, Kim Vik, Rob Honsberger
HDC0609R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 24, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605426 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
605426 -01	MW51
605426 -02	MW103
605426 -03	MW104
605426 -04	MW105
605426 -05	MW106
605426 -06	MW107
605426 -07	MW108
605426 -08	MW109
605426 -09	EB107
605426 -10	WB01
605426 -11	EB01
605426 -12	TB03

The 8270D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for dibenz(a,h)anthracene. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16
Date Received: 05/24/16
Project: TOC_01-176, WORFDB8 F&BI 605426
Date Extracted: 05/24/16
Date Analyzed: 05/24/16 and 05/25/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
MW51 605426-01	<100	92
MW103 605426-02	800	92
MW104 605426-03 1/10	9,300	101
MW105 605426-04	<100	90
MW106 605426-05	<100	93
MW107 605426-06	<100	93
MW108 605426-07	1,600	96
MW109 605426-08	<100	89
EB107 605426-09	<100	82
WB01 605426-10	<100	92
EB01 605426-11	<100	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

Date Extracted: 05/24/16

Date Analyzed: 05/24/16 and 05/25/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate <u>(% Recovery)</u> (Limit 51-134)
TB03 605426-12	<100	91
Method Blank 06-1006 MB	<100	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16
 Date Received: 05/24/16
 Project: TOC_01-176, WORFDB8 F&BI 605426
 Date Extracted: 05/24/16
 Date Analyzed: 05/25/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS
 DIESEL AND MOTOR OIL
 USING METHOD NWTPH-Dx**
 Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
MW103 605426-02	860 x	<250	98
MW104 605426-03	4,700 x	340 x	100
MW105 605426-04 1/1.2	<60	<300	106
MW106 605426-05 1/1.4	130 x	<350	99
MW107 605426-06 1/1.2	<60	<300	97
MW108 605426-07	320 x	<250	97
MW109 605426-08 1/1.2	<60	<300	91
EB107 605426-09	<50	<250	98
WB01 605426-10 1/1.2	<60	<300	94
EB01 605426-11 1/1.2	<60	<300	91
Method Blank 06-1048 MB	<50	<250	109

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW103	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-02
Date Analyzed:	06/07/16	Data File:	605426-02.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	11.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW104	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-03
Date Analyzed:	06/07/16	Data File:	605426-03.071
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW105	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-04
Date Analyzed:	06/07/16	Data File:	605426-04.072
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW106	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-05
Date Analyzed:	06/07/16	Data File:	605426-05.073
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-06
Date Analyzed:	06/07/16	Data File:	605426-06.074
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW108	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-07
Date Analyzed:	06/07/16	Data File:	605426-07.075
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW109	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-08
Date Analyzed:	06/07/16	Data File:	605426-08.076
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EB107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-09
Date Analyzed:	06/07/16	Data File:	605426-09.077
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	WB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-10
Date Analyzed:	06/07/16	Data File:	605426-10.078
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	605426-11
Date Analyzed:	06/07/16	Data File:	605426-11.079
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/26/16	Lab ID:	I6-340 mb
Date Analyzed:	06/06/16	Data File:	I6-340 mb.059
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW103	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-02
Date Analyzed:	06/07/16	Data File:	605426-02.058
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	12.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW104	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-03
Date Analyzed:	06/07/16	Data File:	605426-03.060
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW105	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-04
Date Analyzed:	06/07/16	Data File:	605426-04.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	4.78

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW106	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-05
Date Analyzed:	06/07/16	Data File:	605426-05.062
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-06
Date Analyzed:	06/07/16	Data File:	605426-06.063
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW108	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-07
Date Analyzed:	06/07/16	Data File:	605426-07.064
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	1.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW109	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-08
Date Analyzed:	06/07/16	Data File:	605426-08.065
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	6.73

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EB107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-09
Date Analyzed:	06/07/16	Data File:	605426-09.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	WB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-10
Date Analyzed:	06/07/16	Data File:	605426-10.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	605426-11
Date Analyzed:	06/07/16	Data File:	605426-11.068
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/25/16	Lab ID:	I6-335 mb
Date Analyzed:	06/07/16	Data File:	I6-335 mb.053
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW51	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-01
Date Analyzed:	05/24/16	Data File:	052414.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW103	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-02
Date Analyzed:	05/24/16	Data File:	052415.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	360 ve
1,2-Dichloroethane (EDC)	<1
Benzene	320 ve
Toluene	11
Ethylbenzene	<1
m,p-Xylene	11
o-Xylene	3.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW103	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-02 1/10
Date Analyzed:	05/25/16	Data File:	052506.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	380
1,2-Dichloroethane (EDC)	<10
Benzene	320
Toluene	<10
Ethylbenzene	<10
m,p-Xylene	<20
o-Xylene	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW104	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-03
Date Analyzed:	05/24/16	Data File:	052416.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	0.65
Toluene	17
Ethylbenzene	310 ve
m,p-Xylene	910 ve
o-Xylene	130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW104	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-03 1/10
Date Analyzed:	05/25/16	Data File:	052507.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<10
1,2-Dichloroethane (EDC)	<10
Benzene	<3.5
Toluene	16
Ethylbenzene	370
m,p-Xylene	1,100
o-Xylene	130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW105	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-04
Date Analyzed:	05/24/16	Data File:	052417.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW106	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-05
Date Analyzed:	05/24/16	Data File:	052418.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-06
Date Analyzed:	05/24/16	Data File:	052419.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW108	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-07
Date Analyzed:	05/24/16	Data File:	052420.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	0.69
Toluene	<1
Ethylbenzene	4.1
m,p-Xylene	10
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW109	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-08
Date Analyzed:	05/24/16	Data File:	052421.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-09
Date Analyzed:	05/24/16	Data File:	052422.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-10
Date Analyzed:	05/24/16	Data File:	052423.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-11
Date Analyzed:	05/24/16	Data File:	052424.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TB03	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-12
Date Analyzed:	05/24/16	Data File:	052409.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	06-1027 mb
Date Analyzed:	05/24/16	Data File:	052408.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW103	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-02 1/2
Date Analyzed:	05/25/16	Data File:	052515.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	102	31	160
Benzo(a)anthracene-d12	97	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW104	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-03 1/2
Date Analyzed:	05/25/16	Data File:	052516.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	103	31	160
Benzo(a)anthracene-d12	104	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	160 ve
Acenaphthylene	<0.06
Acenaphthene	0.095
Fluorene	0.085
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW104	Client: HydroCon
Date Received: 05/24/16	Project: TOC_01-176, WORFDB8 F&BI 605426
Date Extracted: 05/24/16	Lab ID: 605426-03 1/200
Date Analyzed: 05/26/16	Data File: 052606.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	299 d	31	160
Benzo(a)anthracene-d12	116 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	270
Acenaphthylene	<6
Acenaphthene	<6
Fluorene	<6
Phenanthrene	<6
Anthracene	<6
Fluoranthene	<6
Pyrene	<6
Benz(a)anthracene	<6
Chrysene	<6
Benzo(a)pyrene	<6
Benzo(b)fluoranthene	<6
Benzo(k)fluoranthene	<6
Indeno(1,2,3-cd)pyrene	<6
Dibenz(a,h)anthracene	<6
Benzo(g,h,i)perylene	<6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW105	Client: HydroCon
Date Received: 05/24/16	Project: TOC_01-176, WORFDB8 F&BI 605426
Date Extracted: 05/24/16	Lab ID: 605426-04 1/2
Date Analyzed: 05/25/16	Data File: 052517.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	98	31	160
Benzo(a)anthracene-d12	106	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW106	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-05 1/2
Date Analyzed:	05/25/16	Data File:	052518.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	102	31	160
Benzo(a)anthracene-d12	112	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-06 1/2
Date Analyzed:	05/25/16	Data File:	052519.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	99	31	160
Benzo(a)anthracene-d12	105	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW108	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-07 1/2
Date Analyzed:	05/25/16	Data File:	052520.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	99	31	160
Benzo(a)anthracene-d12	92	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.71
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW109	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-08 1/2
Date Analyzed:	05/25/16	Data File:	052521.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	160
Benzo(a)anthracene-d12	83	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB107	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-09 1/2
Date Analyzed:	05/25/16	Data File:	052522.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	102	31	160
Benzo(a)anthracene-d12	110	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	WB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-10 1/2
Date Analyzed:	05/25/16	Data File:	052523.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	99	31	160
Benzo(a)anthracene-d12	106	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB01	Client:	HydroCon
Date Received:	05/24/16	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	605426-11 1/2
Date Analyzed:	05/25/16	Data File:	052524.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	31	160
Benzo(a)anthracene-d12	107	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605426
Date Extracted:	05/24/16	Lab ID:	06-1045 mb2
Date Analyzed:	05/25/16	Data File:	052514.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	31	160
Benzo(a)anthracene-d12	106	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16
Date Received: 05/24/16
Project: TOC_01-176, WORFDB8 F&BI 605426
Date Extracted: 05/26/16
Date Analyzed: 05/26/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as µg/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>EDB</u>
MW103 605426-02	0.028
MW104 605426-03	<0.01
MW105 605426-04	<0.01
MW106 605426-05	<0.01
MW107 605426-06	<0.01
MW108 605426-07	<0.01
MW109 605426-08	<0.01
EB107 605426-09	<0.01
WB01 605426-10	<0.01
EB01 605426-11	<0.01
Method Blank	<0.01
EDB 1,2-Dibromoethane	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605414-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	94	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	107	63-142	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 605307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	98	98	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	107	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 605400-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	6.00	104	100	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	107	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605426-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	50	<0.35	101	76-125
Toluene	ug/L (ppb)	50	<1	95	76-122
Ethylbenzene	ug/L (ppb)	50	<1	97	69-135
m,p-Xylene	ug/L (ppb)	100	<2	96	69-135
o-Xylene	ug/L (ppb)	50	<1	94	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	99	101	69-134	2
Toluene	ug/L (ppb)	50	94	96	72-122	2
Ethylbenzene	ug/L (ppb)	50	97	98	77-124	1
m,p-Xylene	ug/L (ppb)	100	96	97	83-125	1
o-Xylene	ug/L (ppb)	50	94	95	81-121	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605426-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	100	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	95	69-133
Benzene	ug/L (ppb)	50	<0.35	101	76-125
Toluene	ug/L (ppb)	50	<1	95	76-122
Ethylbenzene	ug/L (ppb)	50	<1	97	69-135
m,p-Xylene	ug/L (ppb)	100	<2	96	69-135
o-Xylene	ug/L (ppb)	50	<1	94	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	98	101	64-147	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	91	94	73-132	3
Benzene	ug/L (ppb)	50	99	101	69-134	2
Toluene	ug/L (ppb)	50	94	96	72-122	2
Ethylbenzene	ug/L (ppb)	50	97	98	77-124	1
m,p-Xylene	ug/L (ppb)	100	96	97	83-125	1
o-Xylene	ug/L (ppb)	50	94	95	81-121	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	85	83	67-116	2
Acenaphthylene	ug/L (ppb)	1	83	82	65-119	1
Acenaphthene	ug/L (ppb)	1	83	84	66-118	1
Fluorene	ug/L (ppb)	1	83	82	64-125	1
Phenanthrene	ug/L (ppb)	1	85	84	67-120	1
Anthracene	ug/L (ppb)	1	83	82	65-122	1
Fluoranthene	ug/L (ppb)	1	80	79	65-127	1
Pyrene	ug/L (ppb)	1	81	86	62-130	6
Benz(a)anthracene	ug/L (ppb)	1	89	91	60-118	2
Chrysene	ug/L (ppb)	1	88	89	66-125	1
Benzo(b)fluoranthene	ug/L (ppb)	1	82	84	55-135	2
Benzo(k)fluoranthene	ug/L (ppb)	1	86	88	62-125	2
Benzo(a)pyrene	ug/L (ppb)	1	82	84	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	74	83	36-142	11
Dibenz(a,h)anthracene	ug/L (ppb)	1	68	88	37-133	26 vo
Benzo(g,h,i)perylene	ug/L (ppb)	1	72	88	34-135	20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/16

Date Received: 05/24/16

Project: TOC_01-176, WORFDB8 F&BI 605426

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	110	108	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759

 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Sampler's Name: _____
 Project Name: TOC Holdings Company

 Facility Number: 01-176 Montlake Terrace

 Facility Address: HERMAN

 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time US/D03/ATC

x	Standard 10 business days
	Rush _____

Rush Charges Authorized by: _____
 Sample Disposal: 30 days Return Will Call

Additional Comments: _____

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Notes		
						TPH-Gx	8260C BTEX	8260C MTBE	8260C EDC	8011M EDB	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF				
1	MW51	01 A-F	05/20/16	1050	W	6	X	X										
2	MW102				W		X	X	X	X	X	X	X	X	X			Caution possible product 2.86' Prod
3	MW103	02 A-L	05/19/16	1615	W	12	X	X	X	X	X	X	X	X	X			
4	MW104	03 A-L	05/20/16	1220	W	12	X	X	X	X	X	X	X	X	X			Caution possible product
5	MW105	04 A-L	05/19/16	1420	W	12	X	X	X	X	X	X	X	X	X			
6	MW106	05 A-L	05/23/16	1337	W	12	X	X	X	X	X	X	X	X	X			
7	MW107	06 A-L	05/23/16	1219	W	12	X	X	X	X	X	X	X	X	X			
8	MW108	07 A-L	05/19/16	1440	W	12	X	X	X	X	X	X	X	X	X			
9	MW109	08 A-L	05/19/16	1525	W	12	X	X	X	X	X	X	X	X	X			
10	EB107	09 A-L	05/23/16	1240	W	12	✓	✓	✓	✓	✓	✓	✓	✓	✓			
11	WB01	10 A-L	05/20/16	1415	W	12	✓	✓	✓	✓	✓	✓	✓	✓	✓			Samples received at <u>3</u> °C

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

Relinquished by: _____
 Received by: _____
 Relinquished by: _____
 Received by: _____

Signature	Print Name	Time	Date
	Harry Namba	0922	24 May 2016
	Nhan Phan	0922	24 May 2016

605426

SAMPLE CHAIN OF CUSTODY

MS 5/24/16 V₅ / DO₂ / AT₆

Send Report To Craig Hultgren, R. Hansberger, R. Brooks,
K. V. K., A. Greiner
 Company Hydrocon Environmental
 Address 510 Allen Street, Ke Suite B
 City, State, ZIP Kelso, WA 98626
 Phone # 360.703.6079 Fax # 360.703.6086

SAMPLERS (signature) L. Namba, W. Rajkovich

PROJECT NAME/NO. TOC Montlake Terrace PO# _____
01-176

REMARKS Trip Blank - Laboratory supplied.
Dissolved sample field filtered and preserved.
EBC1 associated with mw53 (TOC Property)

Page # 1 of 1

TURNAROUND TIME
 Standard (2 Weeks)
 RUSH
 Rush charges authorized by _____

SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes		
						TPH-Diesel	TPH-Gasoline	BTEX by 8260	MTBE	VOCs by 8260	EDC by 8260	PAHs by 8270	Total Pb by 200.8	Dissolved Pb by 200.8				
EBC1	11A-L	05/20/16	1445	water	12	✓	✓	✓	✓	✓	✓	✓	✓					
TB03	12A-H	05/20/16	0930	water	8		✓	✓	✓	✓	✓							

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	Larry Namba	Hydrocon Environmental	05/24/16	0922
Received by: <u>[Signature]</u>	Nhan Phan	FCBT	5/24/16	0922
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 14, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 27, 2016 from the TOC_01-176, WORFDB8 F&BI 605534 project. There are 67 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner, Rebekah Brooks, Kim Vik
HDC0614R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 27, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605534 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
605534 -01	MW48
605534 -02	MW52
605534 -03	MW55
605534 -04	MW63
605534 -05	MW65
605534 -06	MW67
605534 -07	MW68
605534 -08	MW77
605534 -09	MW84
605534 -10	MW85
605534 -11	MW86
605534 -12	MTL-03
605534 -13	MW89
605534 -14	MW69
605534 -15	EB55
605534 -16	EB63
605534 -17	EB69
605534 -18	EB84
605534 -19	EB85
605534 -20	EB86
605534 -21	EB89
605534 -22	EB65

Several 8270D compounds exceeded the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/31/16
Date Analyzed: 05/31/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 51-134)
MW48 605534-01	4,800	126
MW52 605534-02	<100	98
MW55 605534-03	<100	93
MW63 605534-04	<100	92
MW65 605534-05	<100	96
MW67 605534-06	<100	92
MW68 605534-07	<100	94
MW77 605534-08	<100	94
MW84 605534-09	400	100
MW85 605534-10	<100	94
MW86 605534-11	230	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/31/16
Date Analyzed: 05/31/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 51-134)
MTL-03 605534-12	230	95
MW89 605534-13	<100	94
MW69 605534-14	3,300	96
EB55 605534-15	<100	94
EB63 605534-16	<100	97
EB69 605534-17	<100	93
EB84 605534-18	<100	92
EB85 605534-19	<100	94
EB86 605534-20	<100	94
EB89 605534-21	<100	93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/31/16
Date Analyzed: 05/31/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 51-134)
EB65 605534-22	<100	95
Method Blank 06-1065 MB	<100	94
Method Blank 06-1067 MB	<100	82

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
 Date Received: 05/27/16
 Project: TOC_01-176, WORFDB8 F&BI 605534
 Date Extracted: 05/27/16 and 05/31/16
 Date Analyzed: 06/02/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS
 DIESEL AND MOTOR OIL
 USING METHOD NWTPH-Dx**
 Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
MW77 605534-08	<50	<250	102
MW84 605534-09	190 x	<250	108
MW85 605534-10	<50	<250	107
MW86 605534-11	83 x	<250	107
MTL-03 605534-12	86 x	<250	106
MW89 605534-13 1/1.2	<60	<300	108
MW69 605534-14	1,100 x	<250	108
EB69 605534-17	<50	<250	115
EB84 605534-18	<50	<250	106
EB85 605534-19	<50	<250	107
EB86 605534-20	<50	<250	121

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16 and 05/31/16
Date Analyzed: 06/02/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
EB89 605534-21	<50	<250	118
Method Blank 06-1102 MB	<50	<250	136
Method Blank 06-1109 MB	<50	<250	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW48	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-01
Date Analyzed:	06/09/16	Data File:	605534-01.020
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	5.13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW86	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-11
Date Analyzed:	06/01/16	Data File:	605534-11.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MTL-03	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-12
Date Analyzed:	06/09/16	Data File:	605534-12.021
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EB86	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-20
Date Analyzed:	06/09/16	Data File:	605534-20.022
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	I6-345 mb
Date Analyzed:	05/31/16	Data File:	I6-345 mb.039
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW48	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	06/01/16	Lab ID:	605534-01
Date Analyzed:	06/08/16	Data File:	605534-01.117
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	1.20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW86	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	06/01/16	Lab ID:	605534-11
Date Analyzed:	06/08/16	Data File:	605534-11.118
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MTL-03	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	06/01/16	Lab ID:	605534-12
Date Analyzed:	06/08/16	Data File:	605534-12.119
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EB86	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	06/01/16	Lab ID:	605534-20
Date Analyzed:	06/08/16	Data File:	605534-20.121
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	06/01/16	Lab ID:	I6-350 mb
Date Analyzed:	06/01/16	Data File:	I6-350 mb.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW48	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-01
Date Analyzed:	05/31/16	Data File:	053118.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	109	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	0.37
Toluene	<1
Ethylbenzene	39
m,p-Xylene	240
o-Xylene	44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW52	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-02
Date Analyzed:	05/31/16	Data File:	053119.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW55	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-03
Date Analyzed:	05/31/16	Data File:	053125.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW63	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-04
Date Analyzed:	05/31/16	Data File:	053126.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW65	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-05
Date Analyzed:	05/31/16	Data File:	053127.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	108	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW67	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-06
Date Analyzed:	05/31/16	Data File:	053128.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW68	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-07
Date Analyzed:	05/31/16	Data File:	053129.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW77	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-08
Date Analyzed:	05/31/16	Data File:	053130.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	107	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW84	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-09
Date Analyzed:	05/31/16	Data File:	053131.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	2.2
m,p-Xylene	8.4
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW85	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-10
Date Analyzed:	05/31/16	Data File:	053132.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW86	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-11
Date Analyzed:	05/31/16	Data File:	053133.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MTL-03	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-12
Date Analyzed:	05/31/16	Data File:	053134.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	108	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW89	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-13
Date Analyzed:	05/31/16	Data File:	053135.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	108	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW69	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-14
Date Analyzed:	05/31/16	Data File:	053136.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	0.38
Toluene	<1
Ethylbenzene	19
m,p-Xylene	120
o-Xylene	1.6
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB55	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-15
Date Analyzed:	05/31/16	Data File:	053137.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	107	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB63	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-16
Date Analyzed:	05/31/16	Data File:	053138.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB69	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-17
Date Analyzed:	06/01/16	Data File:	053139.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB84	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-18
Date Analyzed:	06/01/16	Data File:	053140.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB85	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-19
Date Analyzed:	06/01/16	Data File:	053141.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB86	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-20
Date Analyzed:	06/01/16	Data File:	053142.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB89	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-21
Date Analyzed:	06/01/16	Data File:	053143.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB65	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-22
Date Analyzed:	06/01/16	Data File:	053144.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	06-1082 mb
Date Analyzed:	05/31/16	Data File:	053111.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	06-1083 mb
Date Analyzed:	05/31/16	Data File:	053112.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	107	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW77	Client: HydroCon
Date Received: 05/27/16	Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16	Lab ID: 605534-08 1/2
Date Analyzed: 05/31/16	Data File: 053108.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	105	31	160
Benzo(a)anthracene-d12	104	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW84	Client: HydroCon
Date Received: 05/27/16	Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16	Lab ID: 605534-09 1/2
Date Analyzed: 05/31/16	Data File: 053109.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	105	31	160
Benzo(a)anthracene-d12	108	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	1.7
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW85	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/27/16	Lab ID:	605534-10 1/2
Date Analyzed:	05/31/16	Data File:	053110.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	160
Benzo(a)anthracene-d12	110	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW86	Client: HydroCon
Date Received: 05/27/16	Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16	Lab ID: 605534-11 1/2
Date Analyzed: 05/31/16	Data File: 053111.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	110	31	160
Benzo(a)anthracene-d12	116	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MTL-03	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/27/16	Lab ID:	605534-12 1/2
Date Analyzed:	05/31/16	Data File:	053112.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	111	31	160
Benzo(a)anthracene-d12	117	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW89	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/27/16	Lab ID:	605534-13 1/2
Date Analyzed:	05/31/16	Data File:	053113.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	111	31	160
Benzo(a)anthracene-d12	112	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: MW69	Client: HydroCon
Date Received: 05/27/16	Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16	Lab ID: 605534-14 1/2
Date Analyzed: 05/31/16	Data File: 053114.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	160
Benzo(a)anthracene-d12	105	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	13
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB69	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	605534-17 1/2
Date Analyzed:	06/02/16	Data File:	060216.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	115	31	160
Benzo(a)anthracene-d12	125	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB84	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/27/16	Lab ID:	605534-18 1/2
Date Analyzed:	05/31/16	Data File:	053115.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	107	31	160
Benzo(a)anthracene-d12	121	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: EB85	Client: HydroCon
Date Received: 05/27/16	Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16	Lab ID: 605534-19 1/2
Date Analyzed: 05/31/16	Data File: 053116.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	160
Benzo(a)anthracene-d12	124	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: EB86	Client: HydroCon
Date Received: 05/27/16	Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 05/27/16	Lab ID: 605534-20 1/2
Date Analyzed: 05/31/16	Data File: 053117.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	160
Benzo(a)anthracene-d12	124	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB89	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/27/16	Lab ID:	605534-21 1/2
Date Analyzed:	05/31/16	Data File:	053118.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	160
Benzo(a)anthracene-d12	119	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/27/16	Lab ID:	06-1101 mb
Date Analyzed:	05/31/16	Data File:	053107.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	106	31	160
Benzo(a)anthracene-d12	120	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605534
Date Extracted:	05/31/16	Lab ID:	06-1105 mb2
Date Analyzed:	06/02/16	Data File:	060206.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	124	31	160
Benzo(a)anthracene-d12	138	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605534
Date Extracted: 06/06/16
Date Analyzed: 06/06/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as µg/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>EDB</u>
MW86 605534-11	<0.01
MTL-03 605534-12	<0.01
EB86 605534-20	<0.01
Method Blank	<0.01

EDB 1,2-Dibromoethane

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605545-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	92	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605539-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	660	88	90	53-117	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	95	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	113	98	63-142	14

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	98	63-142	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 605534-11 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	99	92	70-130	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	107	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 605505-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	85	85	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	101	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605534-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	104	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	69-133
Benzene	ug/L (ppb)	50	<0.35	105	76-125
Toluene	ug/L (ppb)	50	<1	96	76-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
m,p-Xylene	ug/L (ppb)	100	<2	97	69-135
o-Xylene	ug/L (ppb)	50	<1	95	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	102	105	64-147	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	101	73-132	2
Benzene	ug/L (ppb)	50	105	107	69-134	2
Toluene	ug/L (ppb)	50	96	98	72-122	2
Ethylbenzene	ug/L (ppb)	50	98	100	77-124	2
m,p-Xylene	ug/L (ppb)	100	97	99	83-125	2
o-Xylene	ug/L (ppb)	50	94	96	81-121	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605542-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	102	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	69-133
Benzene	ug/L (ppb)	50	<0.35	105	76-125
Toluene	ug/L (ppb)	50	<1	95	76-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
m,p-Xylene	ug/L (ppb)	100	<2	96	69-135
o-Xylene	ug/L (ppb)	50	<1	93	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	104	99	64-147	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	95	73-132	5
Benzene	ug/L (ppb)	50	106	101	69-134	5
Toluene	ug/L (ppb)	50	96	93	72-122	3
Ethylbenzene	ug/L (ppb)	50	98	94	77-124	4
m,p-Xylene	ug/L (ppb)	100	97	93	83-125	4
o-Xylene	ug/L (ppb)	50	95	91	81-121	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	89	90	67-116	1
Acenaphthylene	ug/L (ppb)	1	95	96	65-119	1
Acenaphthene	ug/L (ppb)	1	92	91	66-118	1
Fluorene	ug/L (ppb)	1	95	93	64-125	2
Phenanthrene	ug/L (ppb)	1	92	93	67-120	1
Anthracene	ug/L (ppb)	1	92	93	65-122	1
Fluoranthene	ug/L (ppb)	1	99	93	65-127	6
Pyrene	ug/L (ppb)	1	105	106	62-130	1
Benz(a)anthracene	ug/L (ppb)	1	100	103	60-118	3
Chrysene	ug/L (ppb)	1	94	97	66-125	3
Benzo(b)fluoranthene	ug/L (ppb)	1	100	103	55-135	3
Benzo(k)fluoranthene	ug/L (ppb)	1	99	97	62-125	2
Benzo(a)pyrene	ug/L (ppb)	1	101	101	58-127	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	97	100	36-142	3
Dibenz(a,h)anthracene	ug/L (ppb)	1	88	84	37-133	5
Benzo(g,h,i)perylene	ug/L (ppb)	1	89	92	34-135	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 605535-03 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	2	<0.06	66	72	10-172	9
Acenaphthylene	ug/L (ppb)	2	<0.06	73	81	38-137	10
Acenaphthene	ug/L (ppb)	2	<0.06	70	78	20-150	11
Fluorene	ug/L (ppb)	2	<0.06	80	86	10-181	7
Phenanthrene	ug/L (ppb)	2	<0.06	84	89	58-109	6
Anthracene	ug/L (ppb)	2	<0.06	86	91	47-114	6
Fluoranthene	ug/L (ppb)	2	<0.06	98	103	10-171	5
Pyrene	ug/L (ppb)	2	<0.06	99	104	63-107	5
Benz(a)anthracene	ug/L (ppb)	2	<0.06	102 vo	106 vo	60-93	4
Chrysene	ug/L (ppb)	2	<0.06	97	101	60-102	4
Benzo(b)fluoranthene	ug/L (ppb)	2	<0.06	100 vo	104 vo	62-91	4
Benzo(k)fluoranthene	ug/L (ppb)	2	<0.06	102 vo	106 vo	51-98	4
Benzo(a)pyrene	ug/L (ppb)	2	<0.06	94 vo	98 vo	60-86	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2	<0.06	79	80	10-98	1
Dibenz(a,h)anthracene	ug/L (ppb)	2	<0.06	75	76	10-97	1
Benzo(g,h,i)perylene	ug/L (ppb)	2	<0.06	71	74	10-102	4

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	0.25	75	72	67-116	4
Acenaphthylene	ug/L (ppb)	0.25	76	79	65-119	4
Acenaphthene	ug/L (ppb)	0.25	76	75	66-118	1
Fluorene	ug/L (ppb)	0.25	80	82	64-125	2
Phenanthrene	ug/L (ppb)	0.25	81	84	67-120	4
Anthracene	ug/L (ppb)	0.25	79	83	65-122	5
Fluoranthene	ug/L (ppb)	0.25	88	93	65-127	6
Pyrene	ug/L (ppb)	0.25	88	96	62-130	9
Benz(a)anthracene	ug/L (ppb)	0.25	89	93	60-118	4
Chrysene	ug/L (ppb)	0.25	85	89	66-125	5
Benzo(b)fluoranthene	ug/L (ppb)	0.25	83	90	55-135	8
Benzo(k)fluoranthene	ug/L (ppb)	0.25	88	92	62-125	4
Benzo(a)pyrene	ug/L (ppb)	0.25	80	85	58-127	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	0.25	81	83	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	0.25	79	77	37-133	3
Benzo(g,h,i)perylene	ug/L (ppb)	0.25	80	79	34-135	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605534

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	93	91	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



605534

ME 5/27/16

Page # 1 of 2 v4/DOY/AIS

Sampler's Name: CDaghet
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: DRAKE
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time

Standard 10 business days
 Rush _____

Rush Charges Authorized by: _____

Sample Disposal: 30 days Return Will Call

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759

 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments: Trip blank on TOC Permutasis Property chain of custody. Dissolved lead samples were field filtered and preserved. EB sample water provided by laboratory.

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Notes		
						TPH-Gx	8260C BTEX	8260C MTBE	8260C EDC	8011M EDB	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF				
1	MW48	01 A-H	05/24/16	1521	W	8	X	X								X	X	
2	MW52	02 A-F	05/24/16	1635	W	6	X	X										
3	MW55	03 A-F	05/24/16	1326	W	6	X	X										
4	MW63	04 A-F	05/25/16	1125	W	6	X	X										
5	MW65	05 A-F	05/24/16	1120	W	6	X	X	X									
6	MW67	06 A-F	05/25/16	1005	W	6	X	X	X									
7	MW68	07 A-F	05/23/16	1529	W	6	X	X	X									
8	MW77	08 A-H	05/24/16	1400 1515	W	8	X	X	X			X	X					
9	MW84	09 A-H	05/23/16	1705	W	8	X	X	X			X	X					
10	MW85	10 A-H	05/25/16	1253	W	8	X	X	X			X	X					Samples received at 3 °C
11	MW86	11 A-L	05/23/16	1335	W	12	X	X	X	X	X	X	X	X	X			

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

Signature	Print Name	Time	Date
<i>[Signature]</i>	Larry Namba	1121	27 May 2016
<i>[Signature]</i>	Elizabeth Radford	1121	27 May 2016

605534



MES/27/16

v4/D04/AIS

Sampler's Name: L. Namba, W. Rajkovich
 Project Name: c. Doshel
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: DRAKE
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time

Standard 10 business days
 Rush _____

Rush Charges Authorized by: _____

Sample Disposal: 30 days Return Will Call

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759
 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments: see page 1.

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Notes		
						TPH-Gx	8260C BTEX	8260C MTBE	8260C EDC	8011M EDB	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF				
1	MTL-03	12 A-L	05/23/16	1335	W	12	X	X	X	X	X	X	X	X	X	X	X	⊗ - per LN 05/27/16
2	MW89	13 A-H	05/24/16	1310	W	8	X	X	X			X	X					
3	MW129	14 A-F	05/24/16	1515	W	8	✓	✓	✓			✓	✓					Pump Pilled
4	EB55	15	05/24/16	1400	W	6	✓	✓										
5	EB63	16 ✓	05/25/16	1200	W	6	✓	✓										✓ - per LN 5/27/16
6	EB69	17 A H	05/25/16	1030	W	6	✓	✓	✓			⊗	⊗					
7	EB84	18 A F	05/23/16	1755	W	6	✓	✓	✓			⊗	⊗					
8	EB85	19 A-H	05/25/16	1345	W	8	✓	✓	✓			✓	✓					
9	EB86	20 A-L	05/23/16	1540	W	12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples received at 3 c
10	EB89	21 A-H	05/24/16	1400	W	8	✓	✓	✓			✓	✓					
11	EB65	22 A-F	05/24/16	1150	W	6	✓	✓	✓									Added at lab (NP) 5/27

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

Relinquished by:
 Received by:
 Relinquished by:
 Received by:

Signature	Print Name	Time	Date
<i>[Signature]</i>	LARRY NAMBA	1121	27 May 2016
<i>[Signature]</i>	Elizabeth Radford	1121	27 May 2016

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
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June 14, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 27, 2016 from the TOC_01-176, WORFDB8 F&BI 605535 project. There are 35 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner, Rebekah Brooks, Kim Vik
HDC0614R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 27, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605535 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
605535 -01	MW45
605535 -02	MW49
605535 -03	MW54
605535 -04	MW56
605535 -05	MW58
605535 -06	MW59
605535 -07	MW60
605535 -08	MW66
605535 -09	EB49
605535 -10	EB56
605535 -11	EB58
605535 -12	EB59
605535 -13	EB60
605535 -14	Trip Blank

Several 8270D compounds exceeded the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

Date Extracted: 05/27/16

Date Analyzed: 05/27/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
MW45 605535-01	500	105
MW49 605535-02	<100	98
MW54 605535-03	<100	97
MW56 605535-04	<100	94
MW58 605535-05	<100	99
MW59 605535-06	<100	98
MW60 605535-07	<100	95
MW66 605535-08	<100	98
EB49 605535-09	<100	98
EB56 605535-10	<100	99
EB58 605535-11	<100	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605535
Date Extracted: 05/27/16
Date Analyzed: 05/27/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
EB59 605535-12	<100	97
EB60 605535-13	<100	100
Trip Blank 605535-14	<100	99
Method Blank 06-1064 MB	<100	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/27/16
Project: TOC_01-176, WORFDB8 F&BI 605535
Date Extracted: 05/31/16
Date Analyzed: 05/31/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
MW54 605535-03 1/1.4	<70	<350	89
MW66 605535-08 1/1.2	<60	<300	91
Method Blank 06-1104 MB	<50	<250	81

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW45	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/31/16	Lab ID:	605535-01
Date Analyzed:	06/09/16	Data File:	605535-01.023
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	10.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/31/16	Lab ID:	I6-345 mb
Date Analyzed:	05/31/16	Data File:	I6-345 mb.039
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW45	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	06/01/16	Lab ID:	605535-01
Date Analyzed:	06/08/16	Data File:	605535-01.122
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	4.99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	06/01/16	Lab ID:	I6-350 mb
Date Analyzed:	06/01/16	Data File:	I6-350 mb.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW45	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-01
Date Analyzed:	05/27/16	Data File:	052717.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	6.3
m,p-Xylene	50
o-Xylene	7.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW49	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-02
Date Analyzed:	05/27/16	Data File:	052726.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW54	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-03
Date Analyzed:	05/27/16	Data File:	052727.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW56	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-04
Date Analyzed:	05/27/16	Data File:	052728.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW58	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-05
Date Analyzed:	05/27/16	Data File:	052729.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW59	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-06
Date Analyzed:	05/27/16	Data File:	052730.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW60	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-07
Date Analyzed:	05/27/16	Data File:	052731.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW66	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-08
Date Analyzed:	05/27/16	Data File:	052732.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB49	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-09
Date Analyzed:	05/27/16	Data File:	052733.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB56	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-10
Date Analyzed:	05/27/16	Data File:	052734.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB58	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-11
Date Analyzed:	05/27/16	Data File:	052735.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB59	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-12
Date Analyzed:	05/27/16	Data File:	052736.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EB60	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-13
Date Analyzed:	05/27/16	Data File:	052737.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Trip Blank	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	605535-14
Date Analyzed:	05/27/16	Data File:	052716.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/27/16	Lab ID:	06-1080 mb
Date Analyzed:	05/27/16	Data File:	052708.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW54	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/31/16	Lab ID:	605535-03 1/2
Date Analyzed:	06/02/16	Data File:	060217.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	112	31	160
Benzo(a)anthracene-d12	118	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW66	Client:	HydroCon
Date Received:	05/27/16	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/31/16	Lab ID:	605535-08 1/2
Date Analyzed:	06/02/16	Data File:	060220.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	114	31	160
Benzo(a)anthracene-d12	120	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605535
Date Extracted:	05/31/16	Lab ID:	06-1105 mb2
Date Analyzed:	06/02/16	Data File:	060206.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	124	31	160
Benzo(a)anthracene-d12	138	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

Date Extracted: 06/06/16

Date Analyzed: 06/06/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as µg/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>EDB</u>
Trip Blank 605535-14	<0.01
Method Blank	<0.01

EDB 1,2-Dibromoethane

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605529-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: 605535-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	<100	92	92	50-150	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	97	70-119

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: 605535-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	<350	83	89	50-150	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	87	95	63-142	9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 605534-11 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	99	92	70-130	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	107	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 605505-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	85	85	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	101	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605535-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	96	100	74-127	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	91	94	69-133	3
Benzene	ug/L (ppb)	50	<0.35	97	99	76-125	2
Toluene	ug/L (ppb)	50	<1	93	94	76-122	1
Ethylbenzene	ug/L (ppb)	50	<1	98	99	69-135	1
m,p-Xylene	ug/L (ppb)	100	<2	97	98	69-135	1
o-Xylene	ug/L (ppb)	50	<1	95	97	60-140	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	101	94	64-147	7
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	94	90	73-132	4
Benzene	ug/L (ppb)	50	100	97	69-134	3
Toluene	ug/L (ppb)	50	97	93	72-122	4
Ethylbenzene	ug/L (ppb)	50	102	97	77-124	5
m,p-Xylene	ug/L (ppb)	100	101	97	83-125	4
o-Xylene	ug/L (ppb)	50	100	94	81-121	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 605535-03 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	2	<0.06	66	72	10-172	9
Acenaphthylene	ug/L (ppb)	2	<0.06	73	81	38-137	10
Acenaphthene	ug/L (ppb)	2	<0.06	70	78	20-150	11
Fluorene	ug/L (ppb)	2	<0.06	80	86	10-181	7
Phenanthrene	ug/L (ppb)	2	<0.06	84	89	58-109	6
Anthracene	ug/L (ppb)	2	<0.06	86	91	47-114	6
Fluoranthene	ug/L (ppb)	2	<0.06	98	103	10-171	5
Pyrene	ug/L (ppb)	2	<0.06	99	104	63-107	5
Benz(a)anthracene	ug/L (ppb)	2	<0.06	102 vo	106 vo	60-93	4
Chrysene	ug/L (ppb)	2	<0.06	97	101	60-102	4
Benzo(b)fluoranthene	ug/L (ppb)	2	<0.06	100 vo	104 vo	62-91	4
Benzo(k)fluoranthene	ug/L (ppb)	2	<0.06	102 vo	106 vo	51-98	4
Benzo(a)pyrene	ug/L (ppb)	2	<0.06	94 vo	98 vo	60-86	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2	<0.06	79	80	10-98	1
Dibenz(a,h)anthracene	ug/L (ppb)	2	<0.06	75	76	10-97	1
Benzo(g,h,i)perylene	ug/L (ppb)	2	<0.06	71	74	10-102	4

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	0.25	75	72	67-116	4
Acenaphthylene	ug/L (ppb)	0.25	76	79	65-119	4
Acenaphthene	ug/L (ppb)	0.25	76	75	66-118	1
Fluorene	ug/L (ppb)	0.25	80	82	64-125	2
Phenanthrene	ug/L (ppb)	0.25	81	84	67-120	4
Anthracene	ug/L (ppb)	0.25	79	83	65-122	5
Fluoranthene	ug/L (ppb)	0.25	88	93	65-127	6
Pyrene	ug/L (ppb)	0.25	88	96	62-130	9
Benz(a)anthracene	ug/L (ppb)	0.25	89	93	60-118	4
Chrysene	ug/L (ppb)	0.25	85	89	66-125	5
Benzo(b)fluoranthene	ug/L (ppb)	0.25	83	90	55-135	8
Benzo(k)fluoranthene	ug/L (ppb)	0.25	88	92	62-125	4
Benzo(a)pyrene	ug/L (ppb)	0.25	80	85	58-127	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	0.25	81	83	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	0.25	79	77	37-133	3
Benzo(g,h,i)perylene	ug/L (ppb)	0.25	80	79	34-135	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/27/16

Project: TOC_01-176, WORFDB8 F&BI 605535

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	93	91	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

605535



MES/27/16

Page # 1 of 2

V4/DOY/AIG

L. Namba W. Rajkovic

Sampler's Name: C. Beschel
 Project Name: TOC Holdings Company
 Facility Number: 01-176 Montlake Terrace
 Facility Address: TOC/FARMASONIS
 PO Number: _____
 EDD Requested: EIM

Requested Turn Around Time
 Standard 10 business days
 Rush _____
 Rush Charges Authorized by: _____
 Sample Disposal: 30 days Return Will Call

Report to: Rebekah Brooks & Kim Vik
 cc: Craig Hultgren
 cc: Allison Greiner
 Stantec Consulting Services, Inc.
 19101 36th Avenue West Suite 203
 Lynnwood WA 98036-5759
 kim.vik@stantec.com
 CraigH@hydroconllc.net
 allisongreiner@eurekaprojectsolutions.net

Additional Comments: Trip blank supplied by laboratory. Trip blank also associated with samples from Drake property. Dissolved lead samples field filtered and preserved.

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of containers	ANALYSES REQUESTED										Notes	
						TPH-Gx	8260C BTEX	8260C MTBE	TPH-Dx	8270SIM PAHs	200.8 Pb, Total	200.8 Pb, Diss FF					
1	MW45	05/26/16	1000	W	8	X	X					X	X				
2	MW49	05/25/16	1715	W	6	X	X										
3	MW54	05/26/16	1105	W	24	X	X	X	X	X							MS/MSD
4	MW56	05/25/16	1436	W	6	X	X										
5	MW58	05/25/16	1435	W	6	X	X										
6	MW59	05/25/16	1245	W	6	X	X										
7	MW60	05/25/16	1548	W	6	X	X										
8	MW66	05/24/16	1655	W	8	X	X	X	X	X							
9	EB49	05/25/16	1740	W	6	✓	✓										
10	EB56	05/25/16	1450	W	6	✓	✓										
11	EB58	05/25/16	1455	W	6	✓	✓										

Samples received at 3 °C

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

Relinquished by:
 Received by:
 Relinquished by:
 Received by:

Signature	Print Name	Time	Date
<i>[Signature]</i>	Larry Namba	11:21	27 May 2016
<i>[Signature]</i>	Elizabeth Radford	11:21	27 May 2016

605535

SAMPLE CHAIN OF CUSTODY ME 5/27/16

uy/Day/16 TOC Farmason's Property Page # 2 of 2

Send Report To C. Hultgren, R. Honsberger, R. Brooks, K. V. V. K. V. V. A. Greiner Company Hydrocon Environmental Address 510 Allen Street, Suite B City, State, ZIP Kelso, WA 98626 Phone # 360.703.6079 Fax # 360.703.6086

SAMPLERS (signature) L. Namba, W. Rajkovich, C. Daschel PROJECT NAME/NO. TOC Mountlake Terrace (01-176) PO# REMARKS Trip Blank supplied by laboratory. Trip Blank also associated with samples from Drake property. Dissolved lead samples were field filtered and preserved.

TURNAROUND TIME [X] Standard (2 Weeks) [] RUSH Rush charges authorized by SAMPLE DISPOSAL [X] Dispose after 30 days [] Return samples [] Will call with instructions

Table with columns: Sample ID, Lab ID, Date Sampled, Time Sampled, Sample Type, # of containers, ANALYSES REQUESTED (TPH-Diesel, TPH-Gasoline, BTEX by 8260C, SVOCs by 8270, HFS, EDB, by 8011M), Notes. Rows include EB58, EB59, EB60, Trip Blank, and a temperature note: Samples received at 3 °C.

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

Signature and Print Name table with columns: SIGNATURE, PRINT NAME, COMPANY, DATE, TIME. Rows include Relinquished by (Larry Namba), Received by (Elizabeth Radford), and Relinquished by.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 14, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on May 31, 2016 from the TOC_01-176, WORFDB8 F&BI 605552 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner, Rebekah Brooks, Kim Vik
HDC0614R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 31, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 605552 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID
605552 -01

HydroCon
WB02

Several 8270D compounds exceeded the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/31/16
Project: TOC_01-176, WORFDB8 F&BI 605552
Date Extracted: 05/31/16
Date Analyzed: 06/01/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate <u>(% Recovery)</u> (Limit 51-134)
WB02 605552-01	<100	95
Method Blank 06-1067 MB	<100	82

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16
Date Received: 05/31/16
Project: TOC_01-176, WORFDB8 F&BI 605552
Date Extracted: 05/31/16
Date Analyzed: 06/02/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
WB02 605552-01	<50	<250	96
Method Blank 06-1109 MB	<50	<250	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	WB02	Client:	HydroCon
Date Received:	05/31/16	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	06/01/16	Lab ID:	605552-01
Date Analyzed:	06/08/16	Data File:	605552-01.116
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	06/01/16	Lab ID:	I6-350 mb
Date Analyzed:	06/01/16	Data File:	I6-350 mb.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	WB02	Client:	HydroCon
Date Received:	05/31/16	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	06/02/16	Lab ID:	605552-01
Date Analyzed:	06/03/16	Data File:	605552-01.022
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	HydroCon
Date Received:	NA	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	06/02/16	Lab ID:	I6-354 mb
Date Analyzed:	06/03/16	Data File:	I6-354 mb.020
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WB02	Client:	HydroCon
Date Received:	05/31/16	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	05/31/16	Lab ID:	605552-01
Date Analyzed:	05/31/16	Data File:	053109.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	05/31/16	Lab ID:	06-1082 mb
Date Analyzed:	05/31/16	Data File:	053111.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	WB02	Client:	HydroCon
Date Received:	05/31/16	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	05/31/16	Lab ID:	605552-01 1/2
Date Analyzed:	06/02/16	Data File:	060221.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	107	31	160
Benzo(a)anthracene-d12	124	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
Acenaphthylene	<0.06
Acenaphthene	<0.06
Fluorene	<0.06
Phenanthrene	<0.06
Anthracene	<0.06
Fluoranthene	<0.06
Pyrene	<0.06
Benz(a)anthracene	<0.06
Chrysene	<0.06
Benzo(a)pyrene	<0.06
Benzo(b)fluoranthene	<0.06
Benzo(k)fluoranthene	<0.06
Indeno(1,2,3-cd)pyrene	<0.06
Dibenz(a,h)anthracene	<0.06
Benzo(g,h,i)perylene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	HydroCon
Date Received:	Not Applicable	Project:	TOC_01-176, WORFDB8 F&BI 605552
Date Extracted:	05/31/16	Lab ID:	06-1105 mb2
Date Analyzed:	06/02/16	Data File:	060206.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	124	31	160
Benzo(a)anthracene-d12	138	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

Date Extracted: 06/06/16

Date Analyzed: 06/06/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Results Reported as $\mu\text{g/L}$ (ppb)

<u>Sample ID</u> Laboratory ID	<u>EDB</u>
WB02 605552-01	<0.01
Method Blank	<0.01

EDB 1,2-Dibromoethane

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 605539-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	660	88	90	53-117	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	95	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	98	63-142	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 605505-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	85	85	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	101	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 605552-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	98	99	70-130	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	101	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 605534-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	104	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	69-133
Benzene	ug/L (ppb)	50	<0.35	105	76-125
Toluene	ug/L (ppb)	50	<1	96	76-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
m,p-Xylene	ug/L (ppb)	100	<2	97	69-135
o-Xylene	ug/L (ppb)	50	<1	95	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	102	105	64-147	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	101	73-132	2
Benzene	ug/L (ppb)	50	105	107	69-134	2
Toluene	ug/L (ppb)	50	96	98	72-122	2
Ethylbenzene	ug/L (ppb)	50	98	100	77-124	2
m,p-Xylene	ug/L (ppb)	100	97	99	83-125	2
o-Xylene	ug/L (ppb)	50	94	96	81-121	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 605535-03 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	2	<0.06	66	72	10-172	9
Acenaphthylene	ug/L (ppb)	2	<0.06	73	81	38-137	10
Acenaphthene	ug/L (ppb)	2	<0.06	70	78	20-150	11
Fluorene	ug/L (ppb)	2	<0.06	80	86	10-181	7
Phenanthrene	ug/L (ppb)	2	<0.06	84	89	58-109	6
Anthracene	ug/L (ppb)	2	<0.06	86	91	47-114	6
Fluoranthene	ug/L (ppb)	2	<0.06	98	103	10-171	5
Pyrene	ug/L (ppb)	2	<0.06	99	104	63-107	5
Benz(a)anthracene	ug/L (ppb)	2	<0.06	102 vo	106 vo	60-93	4
Chrysene	ug/L (ppb)	2	<0.06	97	101	60-102	4
Benzo(b)fluoranthene	ug/L (ppb)	2	<0.06	100 vo	104 vo	62-91	4
Benzo(k)fluoranthene	ug/L (ppb)	2	<0.06	102 vo	106 vo	51-98	4
Benzo(a)pyrene	ug/L (ppb)	2	<0.06	94 vo	98 vo	60-86	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2	<0.06	79	80	10-98	1
Dibenz(a,h)anthracene	ug/L (ppb)	2	<0.06	75	76	10-97	1
Benzo(g,h,i)perylene	ug/L (ppb)	2	<0.06	71	74	10-102	4

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	0.25	75	72	67-116	4
Acenaphthylene	ug/L (ppb)	0.25	76	79	65-119	4
Acenaphthene	ug/L (ppb)	0.25	76	75	66-118	1
Fluorene	ug/L (ppb)	0.25	80	82	64-125	2
Phenanthrene	ug/L (ppb)	0.25	81	84	67-120	4
Anthracene	ug/L (ppb)	0.25	79	83	65-122	5
Fluoranthene	ug/L (ppb)	0.25	88	93	65-127	6
Pyrene	ug/L (ppb)	0.25	88	96	62-130	9
Benz(a)anthracene	ug/L (ppb)	0.25	89	93	60-118	4
Chrysene	ug/L (ppb)	0.25	85	89	66-125	5
Benzo(b)fluoranthene	ug/L (ppb)	0.25	83	90	55-135	8
Benzo(k)fluoranthene	ug/L (ppb)	0.25	88	92	62-125	4
Benzo(a)pyrene	ug/L (ppb)	0.25	80	85	58-127	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	0.25	81	83	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	0.25	79	77	37-133	3
Benzo(g,h,i)perylene	ug/L (ppb)	0.25	80	79	34-135	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16

Date Received: 05/31/16

Project: TOC_01-176, WORFDB8 F&BI 605552

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	93	91	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

605552

SAMPLE CHAIN OF CUSTODY ME05-31-16

V2/A12/303

Send Report To C. Hultgren, R. Hansberger, R. Brooks,
K. Viki, A. Greiner
 Company Hydrocon Environmental
 Address 570 Allen Street, Suite B
 City, State, ZIP Kelso, WA 98626
 Phone # 360.703.6079 Fax # 360.703.6086

SAMPLERS (signature) <u>L. Namba</u>	
PROJECT NAME/NO. <u>TOC Mountlake Terrace</u> <u>(01-176)</u>	PO#
REMARKS <u>Water provided by Friedman and</u> <u>Brya. Dissolved lead sample field filtered</u> <u>and preserved</u>	

Page # 1 of 1

TURNAROUND TIME <input checked="" type="checkbox"/> Standard (2 Weeks) <input type="checkbox"/> RUSH Rush charges authorized by _____
SAMPLE DISPOSAL <input checked="" type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Return samples <input type="checkbox"/> Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 802TB	MTBE, EDC, VOCs by 8260	SVOCs by 8270	HFS	EDB by 8011M	PAHs by 8270 SIM	Total Pb by 200.8	Dissolved Pb by 200.8		
WB02	01A	05/27/16	1430	Water	12	✓	✓	✓	✓			✓	✓	✓	✓		
Samples received at <u>5</u> °C																	

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	Larry Namba	Hydrocon Environmental	31 May 2016	1100
Received by: <u>[Signature]</u>	D & V	F&B2	05-31-16	11.10
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 30, 2016

Craig Hultgren, Project Manager
HydroCon
510 Allen St, Suite B
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on June 24, 2016 from the TOC_01-176, WORFDB8 F&BI 606453 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Rob Honsberger, Allison Greiner
HDC0630R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 24, 2016 by Friedman & Bruya, Inc. from the HydroCon TOC_01-176, WORFDB8 F&BI 606453 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>
606453 -01	MW85
606453 -02	MW86
606453 -03	MW101
606453 -04	MW108

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/30/16

Date Received: 06/24/16

Project: TOC_01-176, WORFDB8 F&BI 606453

Date Extracted: 06/27/16

Date Analyzed: 06/27/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
MW85 606453-01	<100	93
MW86 606453-02	290	93
MW101 606453-03	<100	89
MW108 606453-04	3,200	91
Method Blank 06-1248 MB	<100	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/30/16
Date Received: 06/24/16
Project: TOC_01-176, WORFDB8 F&BI 606453
Date Extracted: 06/27/16
Date Analyzed: 06/27/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 41-152)
MW85 606453-01	<50	<250	80
MW86 606453-02	130 x	<250	79
MW101 606453-03	<50	<250	79
MW108 606453-04	650 x	<250	89
Method Blank 06-1287 MB	<50	<250	81

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/30/16

Date Received: 06/24/16

Project: TOC_01-176, WORFDB8 F&BI 606453

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 606467-04 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	99	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/30/16

Date Received: 06/24/16

Project: TOC_01-176, WORFDB8 F&BI 606453

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	82	92	63-142	11

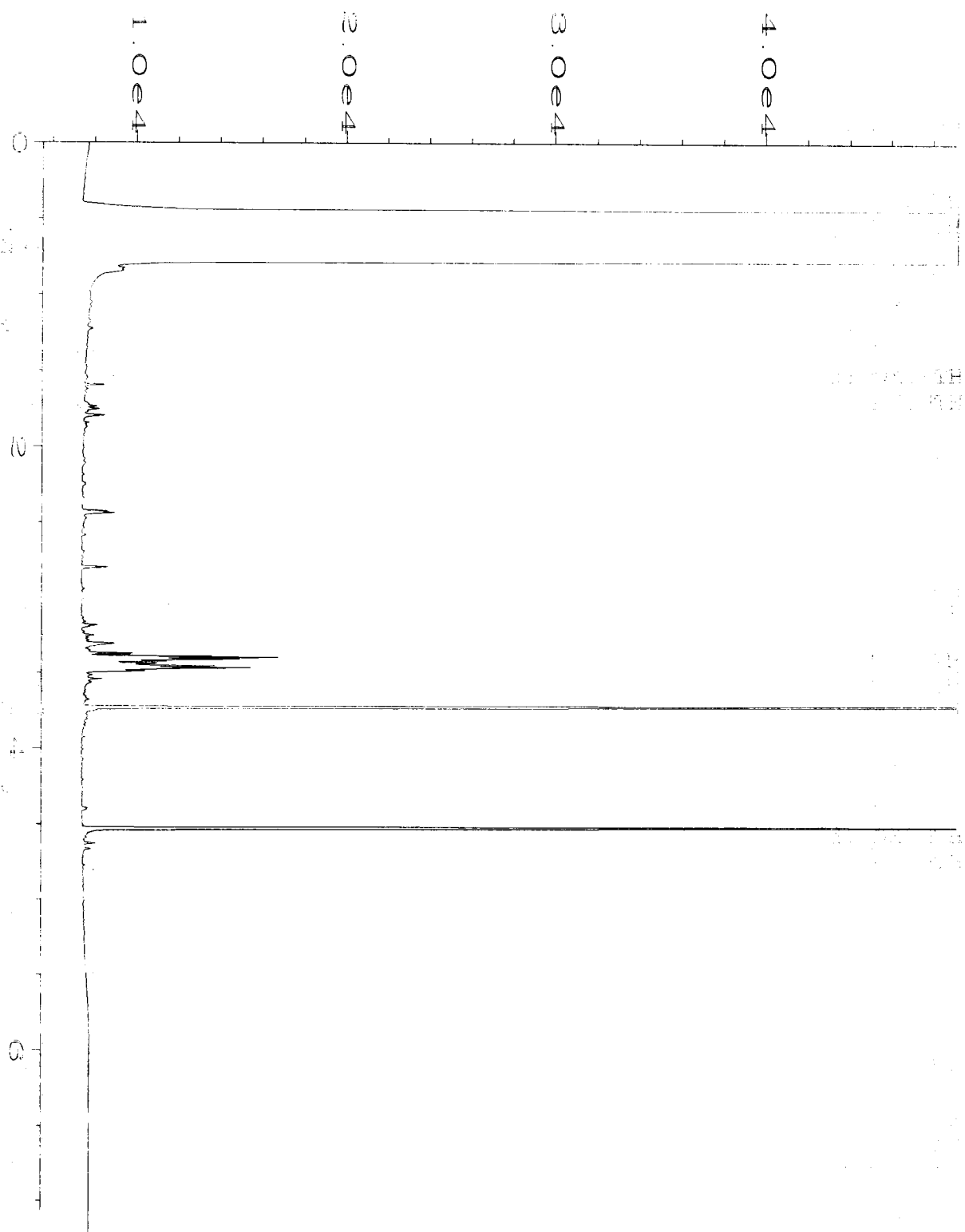
FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

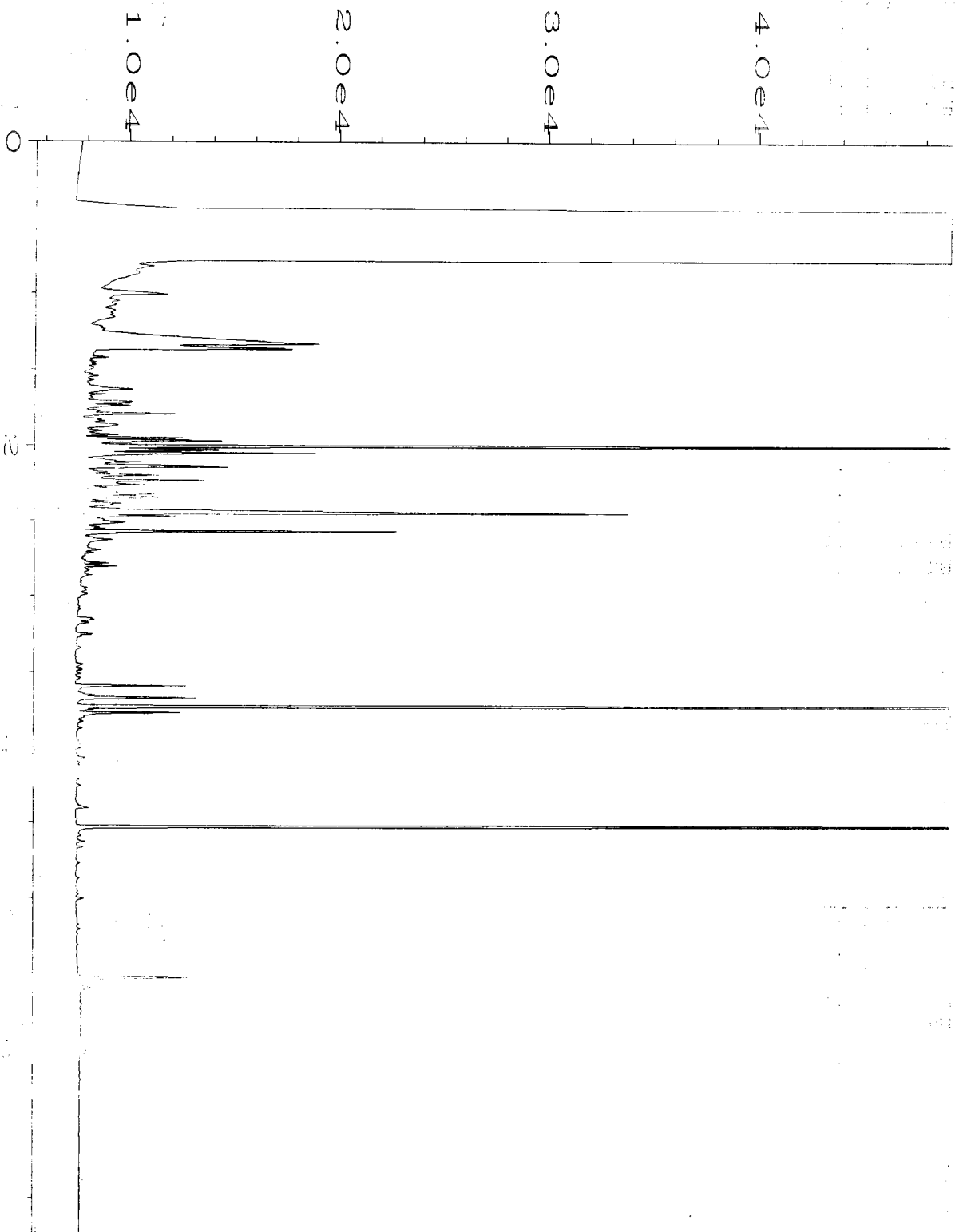
- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
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- dv - Insufficient sample volume was available to achieve normal reporting limits.
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- ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
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- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
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- L - The reported concentration was generated from a library search.
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- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Data File Name :
 Operator :
 Instrument :
 Sample Name :
 Run Time Bar Code :
 Acquired on :
 Report Created on :



Data File Name	: C:\HPCHEM\1\DATA\06-27-16\047F0701.D	Page Number	: 1
Operator	: mwdl	Vial Number	: 47
Instrument	: GC1	Injection Number	: 1
Sample Name	: 606453-01	Sequence Line	: 7
Run Time Bar Code	:	Instrument Method	: DX.MTH
Acquired on	: 27 Jun 16 05:39 PM	Analysis Method	: DX.MTH
Report Created on	: 29 Jun 16 02:43 PM		

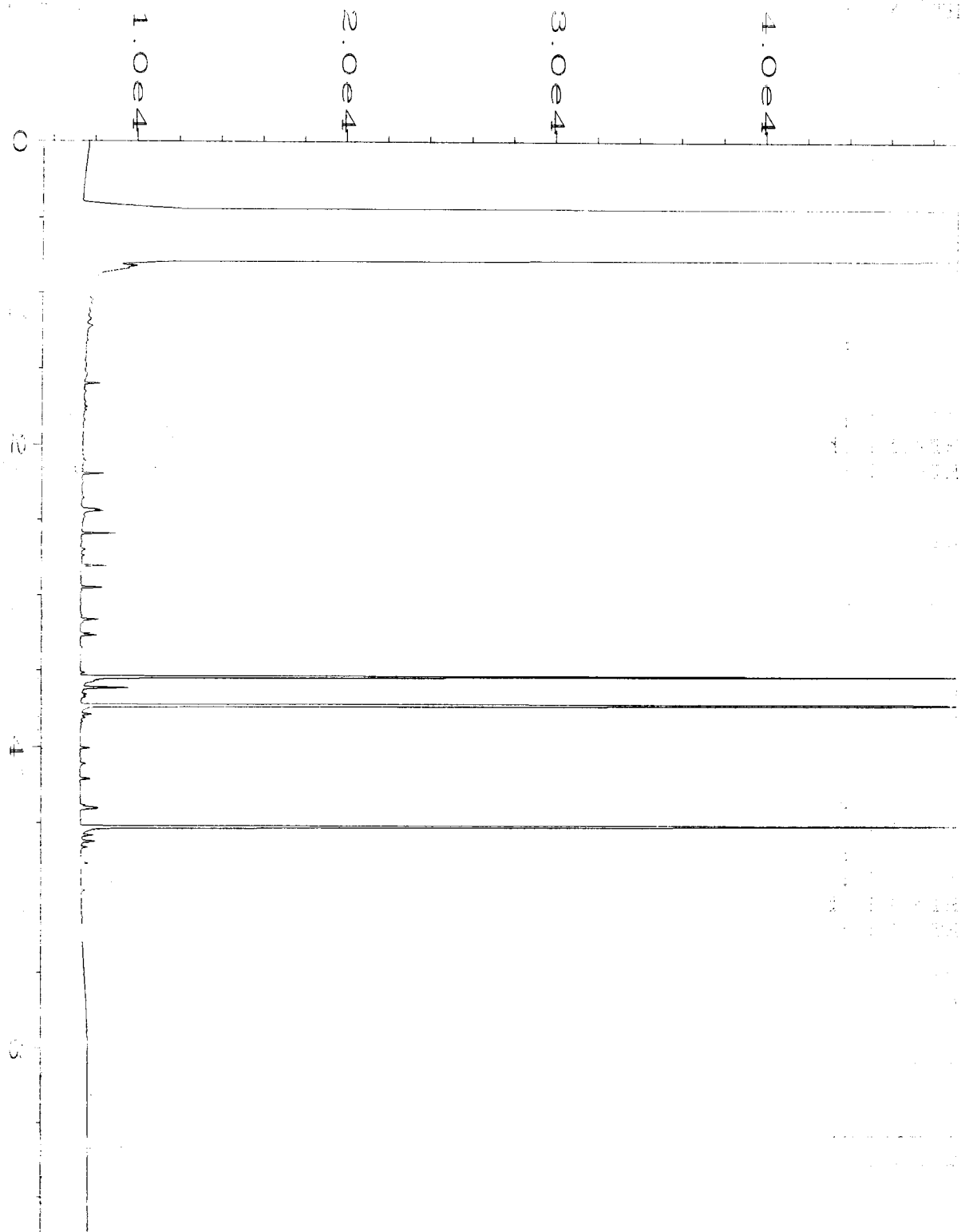
REPORT



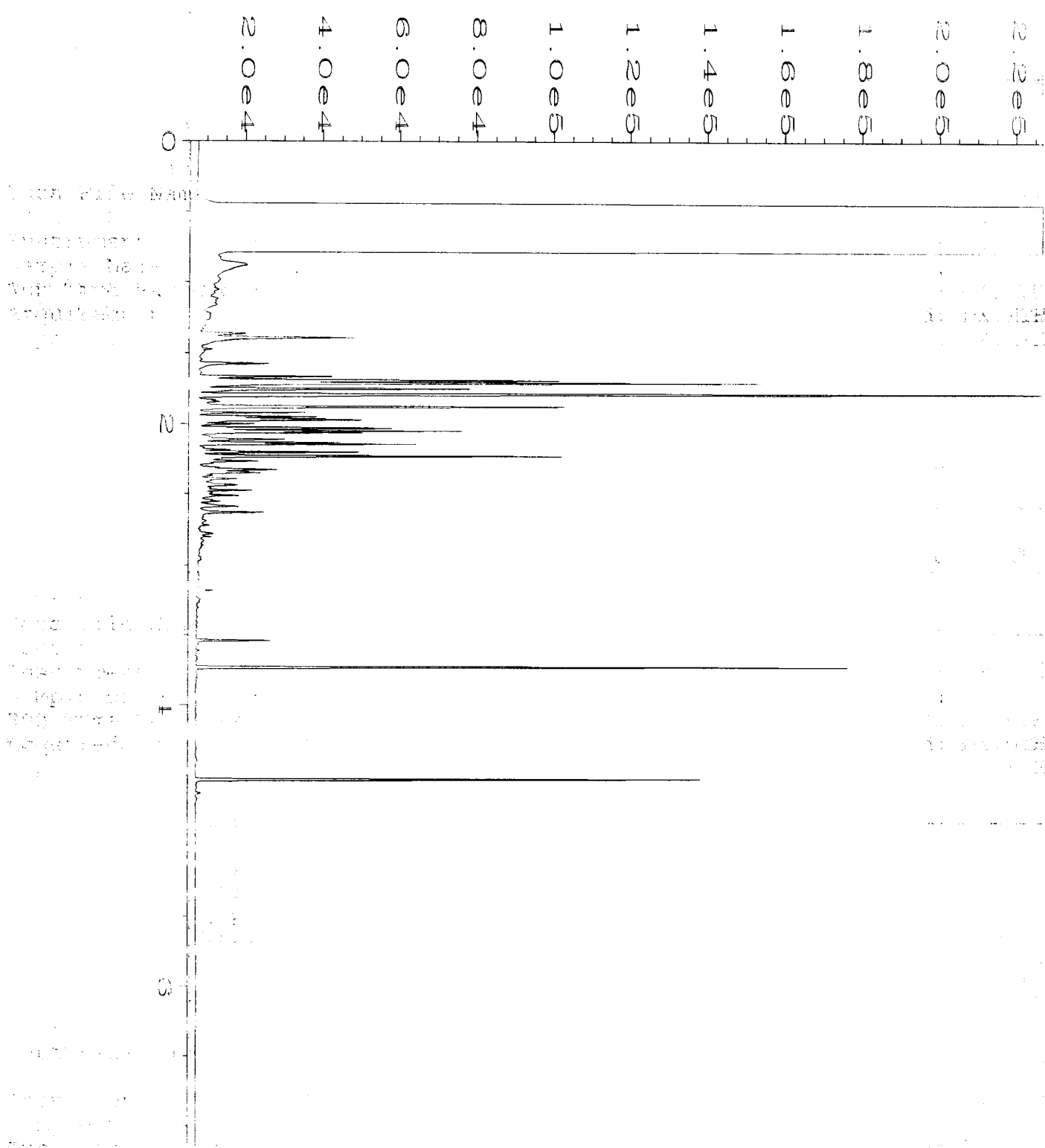
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Operator	: mwdl	Vial Number	: 48
Instrument	: GC1	Injection Number	: 1
Sample Name	: 606453-02	Sequence Line	: 7
Run Time Bar Code:		Instrument Method	: DX.MTH
Acquired on	: 27 Jun 16 05:50 PM	Analysis Method	: DX.MTH
Report Created on:	29 Jun 16 02:44 PM		

Report

DX.MTH

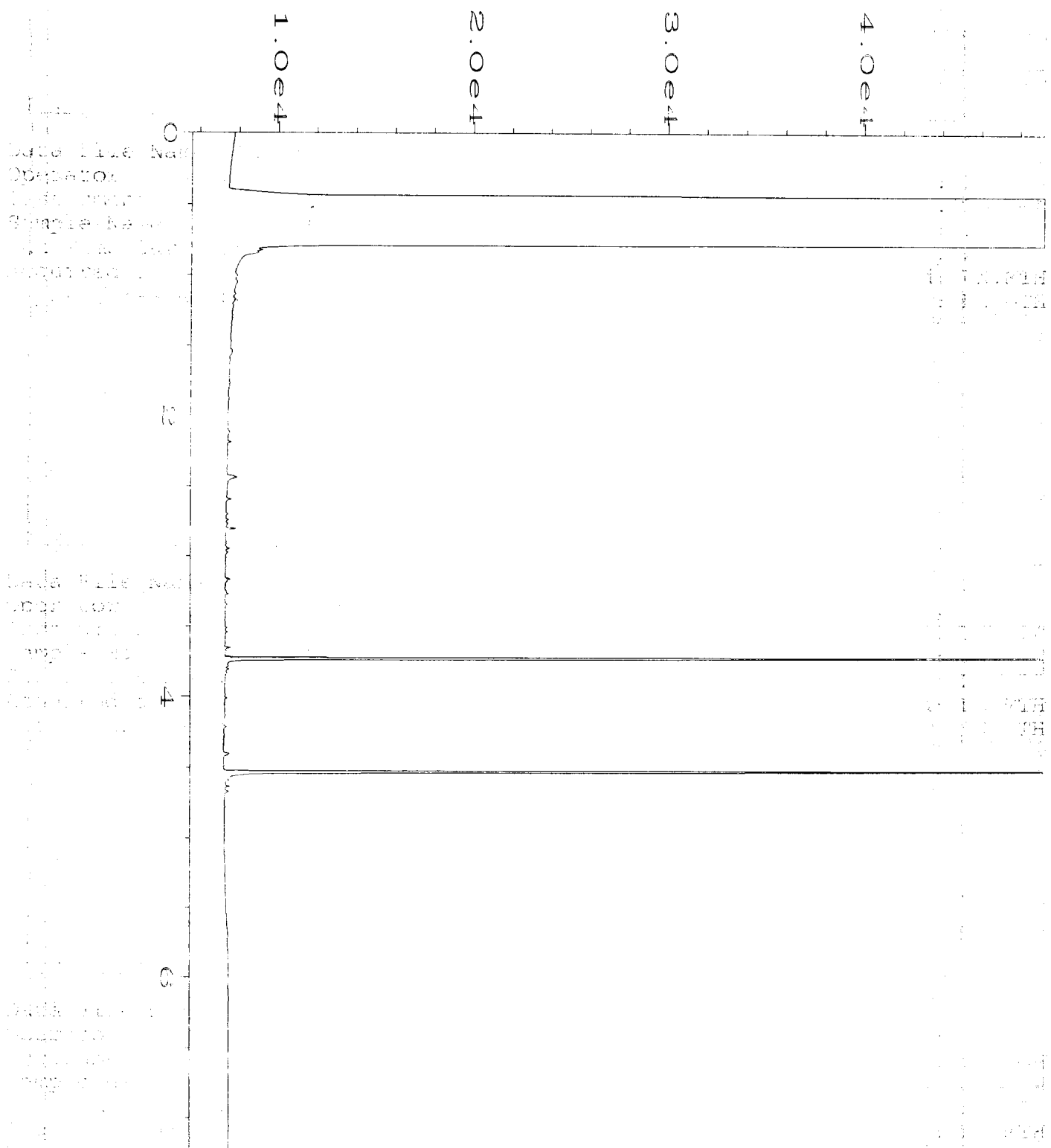


Data File Name	: C:\HPCHEM\1\DATA\06-27-16\049F0701.D	Page Number	: 1
Operator	: mwd1	Vial Number	: 49
Instrument	: GC1	Injection Number	: 1
Sample Name	: 606453-03	Sequence Line	: 7
Run Time Bar Code:		Instrument Method	: DX.MTH
Acquired on	: 27 Jun 16 06:02 PM	Analysis Method	: DX.MTH
Report Created on:	29 Jun 16 02:44 PM		

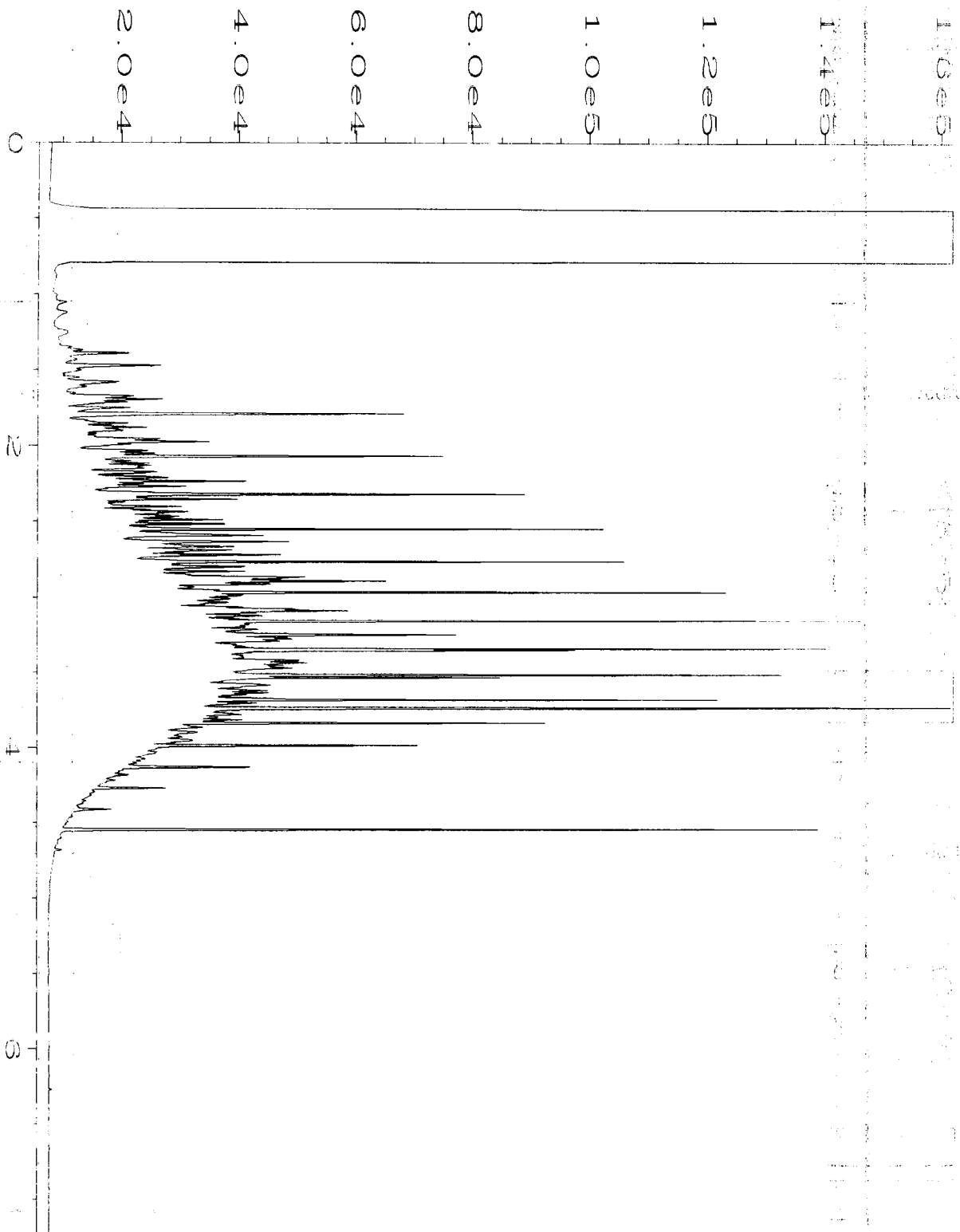


Data File Name : C:\HPCHEM\1\DATA\06-27-16\050F0701.D
 Operator : mwdl
 Instrument : GC1
 Sample Name : 606453-04
 Run Time Bar Code:
 Acquired on : 27 Jun 16 06:13 PM
 Report Created on: 29 Jun 16 02:44 PM

Page Number : 1
 Vial Number : 50
 Injection Number : 1
 Sequence Line : 7
 Instrument Method: DX.MTH
 Analysis Method : DX.MTH



Data File Name : C:\HPCHEM\1\DATA\06-27-16\040F0701.D
 Operator : mwdl
 Instrument : GC1
 Sample Name : 06-1287 mb
 Run Time Bar Code:
 Acquired on : 27 Jun 16 04:20 PM
 Report Created on: 29 Jun 16 02:43 PM
 Page Number : 1
 Vial Number : 40
 Injection Number : 1
 Sequence Line : 7
 Instrument Method: DX.MTH
 Analysis Method : DX.MTH



Data File Name	: C:\HPCHEM\1\DATA\06-27-16\003F0201.D	Page Number	: 1
Operator	: mwdl	Vial Number	: 3
Instrument	: GC1	Injection Number	: 1
Sample Name	: 500 Dx 45-182D	Sequence Line	: 2
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Jun 16 06:16 AM	Analysis Method	: DX.MTH
Report Created on:	29 Jun 16 02:43 PM		

606453

SAMPLE CHAIN OF CUSTODY

ME 06-24-16

V2 / 804

Send Report To Craig Hultgren, Rob Honsberger
 Company Hydrocon Environmental
 Address 510 Allen St. Ste. B
 City, State, ZIP Kelso, WA 98626
 Phone # _____ Fax # _____

SAMPLERS (signature) <u>Warren Rajkovich</u>	
PROJECT NAME/NO. TOC MLT 01-176	PO#
REMARKS	

Page # 1 of 1

TURNAROUND TIME
 Standard (2 Weeks)
 RUSH
 Rush charges authorized by _____

SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED							Notes		
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS				
MW85	01A-E	6-23-16	1303	Water	5	X	X								
MWB6	02 T	6-23-16	1341	Water	5	X	X								
MW101	03	6-23-16	1345	Water	5	X	X								
MW108	04	6-23-16	1450	Water	5	X	X								

Samples received at 2 °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Warren Rajkovich</u>	Warren Rajkovich	Hydrocon	6-24-16	14.45
Received by: <u>[Signature]</u>	[Signature]	F&B	6-24-16	14.45
Relinquished by:				
Received by:				