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TRC Project Number: 140143

April 3, 2018

Massachusetts Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

RE: **DRAFT Immediate Response Action Completion Report**
Weymouth Compressor Station
6 & 50 Bridge Street
Weymouth, Massachusetts 02191
Release Tracking Number 4-26243

To Whom It May Concern:

Consistent with the requirements of the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000), specifically 310 CMR 40.0427, attached please find an Immediate Response Action (IRA) Completion Report for the above-referenced release in Weymouth, Massachusetts. This IRA Completion Report has been submitted concurrently with Massachusetts Department of Environmental Protection (MassDEP) transmittal form BWSC-105 via eDEP.

If you have any questions concerning the IRA Completion Report or transmittal forms, please do not hesitate to contact me at (207) 274-2630 or via e-mail at krace@trcsolutions.com.

Sincerely,

DRAFT

Kelley Race, P.G., LSP

Cc: Gus McLachlan, Gary Davis – Enbridge
Richard Paquette, Michael Tyrrell – TRC
PIP Repository, Weymouth

DRAFT

IMMEDIATE RESPONSE ACTION COMPLETION REPORT

Weymouth Compressor Station
6 & 50 Bridge Street
Weymouth, Massachusetts 02191
Release Tracking Number 4-26243

Prepared for:

890 Winter Street, Suite 300
Waltham, Massachusetts 02451

Prepared by:

TRC Environmental Corporation
650 Suffolk Street
Lowell, Massachusetts 01854

April 2018

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APPENDICES

1.0 RELEASE DESCRIPTION, SITE CONDITIONS AND SURROUNDING RECEPTORS [310 CMR 40.0427 (4)(a)]

TRC Environmental Corporation (TRC) is submitting this Immediate Response Action (IRA) Completion Report for a Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) 72-hour reporting condition pursuant to 310 CMR 40.0313(1). The 72-hour IRA condition was encountered during well gauging activities, when greater than 0.5 inch of light non-aqueous phase liquid (LNAPL) was observed in monitoring well MW-201 at the proposed Atlantic Bridge Project Weymouth Compressor Station (ABPWCS) Site, 6 & 50 Bridge Street, Weymouth, Massachusetts (the Property) (see **Figure 1**).

Following notification of the IRA condition, the Massachusetts Department of Environmental Protection (MassDEP) assigned Release Tracking Number (RTN) 4-26243. For the purposes of this IRA, the Disposal Site Boundary (the Disposal Site) is roughly coincident with the footprint of an approximate 11,256,000-gallon No. 2 Fuel Oil aboveground storage tank (AST) that previously existed on the Property. An IRA Plan dated September 2016 (TRC, 2016a), and IRA Status Reports #1 (TRC, 2016b), #2 (TRC, 2017a), and #3 (TRC, 2017c) were filed with the MassDEP.

This report was prepared to meet the requirements for an IRA Completion Report established under 310 CMR 40.0427 and describes remedial activities and related assessment work performed at the Disposal Site from September 2016 through December 2017. An IRA Transmittal Form (BWSC-105) was submitted concurrently with this report through eDEP.

Enbridge is conducting this IRA on property currently owned by its subsidiary Algonquin Gas Transmission, LLC (Algonquin). Contact information pertaining to the parties involved is provided below.

Property Owner:

Algonquin Gas Transmission, LLC
Attention: Mr. Gus McLachlan
890 Winter Street
Waltham, Massachusetts 02451
(617) 560-1335

Licensed Site Professional:

Kelley Race, P.G., LSP
LSP License Number 3180
TRC Environmental Corporation
2 Liberty Square, 6th Floor
Boston, Massachusetts 02109
(207) 274- 2630

1.1 Release Description

On July 29, 2016, during gauging of monitoring wells on the Property, TRC identified greater than 0.5 inch of LNAPL in monitoring well MW-201, triggering a 72-hour reporting condition, pursuant

to 310 CMR 40.0313(1). TRC and Algonquin informed Calpine Fore River Energy Center (the former owner of the property) of the notification requirement at 9:00 AM on July 29, 2016, and TRC notified MassDEP at 3:04 PM on the same day. The 72-hour reporting condition was reported to the MassDEP by Kelley Race, of TRC, LSP of Record for the Disposal Site. At the time of reporting, MassDEP orally approved the following immediate response actions:

- Evacuate and containerize the LNAPL product from the monitoring well;
- Conduct additional assessment and monitoring on Site; and
- Fingerprint the LNAPL.

The area subject to RTN 4-26243 and this IRA is identified as the locations around monitoring well MW-201 (and B105) where evidence of potential LNAPL impact has been observed (see **Figure 2**). As described later in this IRA Completion Report, the Disposal Site Boundary is roughly coincident with the footprint of an approximate 11,256,000-gallon No. 2 Fuel Oil AST historically located on the Property; however, prior to conducting the IRA, the extent of LNAPL was unknown.

The results of the investigations presented in this IRA Completion Report support delineation of the extent of LNAPL and/or observed petroleum-containing soil, which are generally coincident with the footprint of the former Fuel Oil AST. For the purposes of this report, "petroleum-containing soil" refers to soils observed to contain evidence of petroleum impacts (odor, staining, etc.) during boring advancement. "LNAPL with Micro-scale Mobility", where referenced, refers to oil floating on the groundwater surface, as observed/measured in monitoring wells, or liquid oil product observed during boring advancement.

The MCP in 310 CMR 40.0006 defines "NAPL with Micro-scale Mobility" as "a NAPL with a footprint that is not expanding, but which is visibly present in the subsurface in sufficient quantities to migrate or potentially migrate as a separate phase over a short distance and visibly impact an excavation, boring or monitoring well." (MassDEP, 2014). This definition is consistent with field observations at the Disposal Site, where LNAPL has been observed in only five of the twenty-four monitoring wells.

1.2 Site Conditions

The Disposal Site is identified as an approximate one-acre portion within the four-acre North Parcel of the approximately 12.3-acre ABPWCS Property, a triangular peninsula lying northeast of Route 3A (Bridge Street). The Disposal Site is located within a fenced vacant area in the four-acre North Parcel of the Property, and is delineated as roughly coincident with the footprint of a former approximately

11,256,000-gallon No. 2 Fuel Oil AST located in the south-southwest portion of the Property. The Property is currently owned by Algonquin and is developed with asphalt paved and unpaved access roads, storage areas, and an existing Algonquin metering and regulating station on the southwest portion. A Massachusetts Water Resources Authority (MWRA) pumping station abuts the Property on the northeast. There is an existing public walkway located directly east of the ABPWCS Property along King's Cove. The Weymouth Fore River is located to the north and west of the Property.

The topographic elevation is generally flat ranging from 11.59 feet above mean sea level (amsl) to 14.62 feet amsl, and averages 13.25 feet amsl based on the ground elevation surveyed at 24 monitoring wells located in the vicinity of the Disposal Site, relative to the North American Vertical Datum of1988 (NAVD88). Historically, an approximately 11,256,000-gallon No. 2 Fuel Oil aboveground storage tank (AST) and a 6,000-gallon Fuel Additive AST were located on the North Parcel of the Property.

1.3 Surrounding Receptors

The Disposal Site is located within a fenced vacant area in the North Parcel of the Property. Currently there are no workers at the Disposal Site. Based on 2010 Census data, the estimated population within ½ mile of the Disposal Site is more than 1,000 people. Residential properties lie east and south of King's Cove along streets that connect to Route 3A.

The Weymouth Fore River is located to the north and west of the Property. There is an existing public walkway located directly east of the Property along King's Cove. TRC reviewed United States Geological Survey topographic maps and data maintained at Massachusetts Geographic Information Systems' (MassGIS's) Online Mapping Tool, OLIVER (http://maps.massgis.state.ma.us/map_ol/oliver.php), to evaluate the presence of institutions identified in 310 CMR 40.0483(1)(a) (7). Based on this review, there are no institutions within 500 feet (ft) of the Property or Disposal Site. Natural resources identified in 310 CMR 40.0483(1)(a)(8)(a) are located within 500 feet of the North Parcel, specifically King's Cove/tidal flats and Weymouth Fore River/rocky intertidal shore, located within 500 feet of the east and west sides of the North Parcel. There are no drinking water supplies (310 CMR 40.0483(1)(a)(8)(b)), and no Areas of Critical Environmental Concern (ACEC; 310 CMR 40.0483(1)(a)(8)(c)) identified within 500 feet of the North Parcel or Disposal Site.

1.4 IRA Plan Objectives

As described at the time of reporting on July 29, 2016 and in the September 2016 IRA Plan (TRC, 2016a), the objectives of the IRA are:

- To remove the LNAPL product present in monitoring well MW-201 at the time of reporting;
- To conduct additional assessment and monitoring to evaluate the extent of the area impacted by the IRA condition; and
- To evaluate the type of petroleum hydrocarbons present by collecting a sample of the LNAPL for fingerprint analysis.

As summarized in the IRA Plan:

- Initial removal of observed LNAPL from monitoring well MW-201 (using a bailer) indicated the LNAPL appears to be persistent, highly viscous, and difficult to remove (due to high viscosity);

- Soil borings/monitoring wells completed prior to August 2016 did not delineate the extent of the LNAPL area;

- Groundwater sampling results from August 2016 did not indicate the presence of dissolved-phase petroleum hydrocarbons in groundwater at the Disposal Site or the Property; and

- Total petroleum hydrocarbon (TPH) fingerprint analysis of LNAPL collected from monitoring well MW-201 indicated the LNAPL is identified as No. 2 Fuel Oil.

Previous investigations are detailed in IRA Status Report #1 submitted in November 2016 (TRC, 2016b), IRA Status Report #2 submitted in May 2017 (TRC, 2017a), the Phase I Initial Site Investigation/Tier Classification (ISI/TC) report submitted in July 2017 (TRC, 2017b), and IRA Status Report #3 submitted in November 2017 (TRC, 2017c). A succinct summary of the results of these reports is presented in Section 2 herein.

2.0 DESCRIPTION OF WORK COMPLETED [310 CMR 40.0427(4)(b)]

The following summarizes activities conducted on the Disposal Site prior to and since the 72-hour Notification on July 29, 2016.

2.1 Subsurface Investigations Conducted to Date

Geotechnical investigations on the Property were conducted by GZA GeoEnvironmental (GZA) in support of the proposed ABPWCS project beginning in June 2015. TRC provided environmental oversight of the geotechnical borings conducted by GZA which continued into 2016. Based on the subsurface findings in 2016 associated with detection of petroleum constituents in soil above applicable Reportable Concentrations (RCs) and the presence of subsurface LNAPL, TRC conducted subsequent environmental investigations in 2016 and 2017 to meet the MCP requirements for assessment of an LNAPL release.

Subsurface data collected during the environmental assessments including boring/monitoring well logs, and well development details are provided in **Appendix A**. A summary of monitoring well screen depths, boring depths, major soil depths, and petroleum-containing soil thicknesses are summarized in **Table 1**. A chronological summary of subsurface investigations to date are summarized below.

2.1.1 GZA Subsurface Investigations in 2015 and 2016

Subsurface explorations were conducted to evaluate geotechnical conditions beneath the Property and the suitability of soils in support of infrastructure associated with the ABPWCS project. Borings were installed across the Property, specifically within the North Parcel, in areas where proposed building foundations are being considered as well as in areas where subsurface utilities may be located in support of the ABPWCS project. Subsurface explorations were completed by GZA included:

- Geotechnical borings B-1 through B-10 in June 2015;
- Test pits TP-1, TP-2 and TP-3 in December 2015; and,
- Geotechnical borings B-101 through B-108 in April 2016.

TRC observed these subsurface explorations for visual and/or olfactory impacts and collected select soil samples for laboratory analysis to evaluate environmental conditions. Petroleum contamination observed in soil and confirmed with laboratory analysis at B-105 (as identified above) was detected above MCP RCs. At boring B-105, from approximately 14 to 19 ft below ground surface (bgs), TRC observed petroleum staining and odors. None of the other soil samples collected from the geotechnical borings or test pits exhibited visual or olfactory evidence of contamination. TRC collected a soil sample from B-105 at a depth of 14 to 17 ft bgs for laboratory analysis of extractable petroleum hydrocarbons (EPH) with target polyaromatic hydrocarbons (PAHs) and volatile petroleum hydrocarbons (VPH) with target volatile organic compounds (VOCs). The sample was submitted to Alpha Analytical Laboratories (Alpha) in Westborough, Massachusetts with a completed chain-of-custody. Based on observations made during advancement of boring B-105, the 14 to 17 ft bgs interval represented the greatest observed petroleum impact to soils. Environmental samples are summarized in **Table 2**. Soil analytical data are summarized in **Table 3**. Analytical laboratory reports are provided in **Appendix B.**

2.1.2 TRC Subsurface Investigations in May 2016

On May 10-11, 2016, TRC oversaw the installation of soil borings B/MW-201 through B/MW-205 by New England Boring Contractors (NEB) using a 24-inch split-spoon sampler and conventional hollow-stem auger drilling. TRC performed photoionization detector (PID) jar-headspace testing, and collected soil samples from each boring. Soil samples were submitted to Alpha for EPH and metals analysis with a completed chain-of-custody, as part of initial environmental assessment activities.

Petroleum staining and odors were observed at B/MW-201 in the interval above and below the observed water table, from approximately 12 to 18 ft bgs. No visual or olfactory indicators of petroleum contamination were observed at borings B/MW-202 through B/MW-205. The EPH hydrocarbon range C11-C22 aromatics exceeded the applicable MCP Method 1 S-2/GW-3 standard in the duplicate sample collected at B/MW-201 from 10-12 ft bgs. Sample B/MW-201 (10-12 ft) was collected from the interval above the observed petroleum-containing soil at this location to evaluate the vertical extent of petroleum impact and to complement the 14-17 ft bgs sample collected from the adjacent B-105 location. As previously noted, the petroleum contamination identified above applicable RCs triggered a 120-day MCP release notification to MassDEP.

Each soil boring was completed with a 2-inch inside diameter (ID) Schedule 40 polyvinyl chloride (PVC) monitoring well equipped with 15 ft of 10-slot (0.010-inch diameter machine slotted) screen installed across the observed water table. The monitoring wells (MW-201 through MW-205) were developed on July 29, 2016.

The IRA Plan (TRC, 2016a) submitted to MassDEP in response to the 72-hour release notification addressed the immediate area around B-105 and MW-201 which are located within three feet of each

other. Borings B-1 through B-10, B-101 through B-104, B/MW-202, B/MW-203, B/MW-204, and B/MW-205, and test pits TP-1 through TP-3 are located outside of the area targeted by the IRA Plan. As discussed in the IRA Plan, the above mentioned locations did not indicate visual or laboratory petroleum impacts consistent with the presence of LNAPL.

2.1.3 LNAPL and Groundwater Sampling – August 2016

On August 29 and 30, 2016, TRC completed a round of groundwater sampling from monitoring wells MW-201 through MW-205. Observed LNAPL with micro-scale mobility was removed from the surface of monitoring well MW-201 for fingerprint analysis before the groundwater sample was collected at this location. Groundwater sampling was conducted using low-flow sampling techniques with pump intakes set at the approximate center of the water column in each well. TRC recorded water quality measurements during well purging using In-Situ SmarTROLL™ units fitted with flow-through cells. Groundwater log sheets are included in **Appendix A**. Once water quality parameters stabilized, TRC collected the LNAPL and groundwater samples, placed them on ice, and sent the samples with a completed chain-of-custody to Alpha for VPH and EPH analysis. Groundwater analytical results are summarized in **Table 4.** LNAPL and groundwater analytical reports are provided in **Appendix B.**

2.1.4 Soil and Groundwater Investigations in October – November 2016

On October 12 and 13, 2016, TRC oversaw the installation of 19 small diameter (2.25-inch outside diameter) borings (B-300 through B-319; B-316 was vac-cleared but not installed) by New England Geotech, Inc (NEG) via direct push methods. Borings were advanced in a radial manner to assess the lateral and vertical extent of the LNAPL around B-105 and MW-201. Borings were initially placed approximately 25 feet north, south, east, and west of MW-201, with additional borings completed in a step-back fashion to locate areas of no observed impact based on visual, olfactory, and field screening observations.

Soil samples were continuously collected using a five ft long Geoprobe® Macro-Core® fitted with dedicated acetate liner sleeves. TRC screened soil with a PID using the jar headspace method. Selected soil samples were submitted for EPH/VPH analysis, biased toward the potential presence of fuel oil contamination (e.g., headspace readings).

During the October 2016 soil sampling event, TRC collected six soil grab samples for VPH and EPH analysis to evaluate the extent of petroleum impacts and/or to support field observations of the extent of petroleum impact. Soil samples were placed on ice and shipped to Alpha with a chain-of-custody. Environmental samples are summarized in **Table 2;** Sample results for borings containing LNAPL with micro-scale mobility are included on **Table 5**.

NEB installed monitoring well MW-206 in boring B-310, approximately 95 ft west of monitoring well MW-201. The monitoring well was constructed of two-inch ID PVC casing equipped with 10-slot (0.010-inch machine slotted) well screen installed to approximately 19 ft bgs.

On October 20, 2016, TRC developed monitoring well MW-206 using a Waterra Hydrolift pump and a surge block to remove suspended fine-grained particulate from the well. No measureable LNAPL was present in monitoring well MW-206, and no visual or olfactory evidence of petroleum impact was observed at the time of development.

On November 1 and 3, 2016, TRC completed a round of groundwater samples from monitoring wells MW-201 through MW-206. Observed LNAPL with micro-scale mobility was removed from the surface of monitoring well MW-201 before the groundwater sample was collected at this location. Groundwater sampling was conducted using low-flow sampling techniques with pump intakes set at the approximate center of the water column in each well. TRC recorded water quality measurements during well purging using In-Situ SmarTROLL™ units fitted with flow-through cells. Groundwater log sheets are included in **Appendix A**. Once water quality parameters stabilized, TRC collected groundwater samples, placed them on ice and sent the samples with a completed chain-of-custody to Alpha for VPH and EPH analysis. Groundwater analytical results are summarized in **Table 4.** Groundwater analytical reports are provided in **Appendix B.**

2.1.5 Soil Boring and Monitoring Well Installation in December 2016

On December 12 to December 23, 2016, TRC oversaw the installation of 18 borings (B-400 through B-417), and completion of monitoring wells in each of the borings. The borings and 2-inch ID monitoring wells were completed by NEG using a Geoprobe®. Borings and wells were located to delineate the extent of observed petroleum. The location of the borings and monitoring wells are shown on **Figure 2.**

Seven borings/well locations (B/MW-403, B/MW-404, B/MW-405, B/MW-406, B/MW-407, B/MW-416, and B/MW-417) were pre-cleared for potential utilities to a depth of 5 to 6 ft bgs using a vacuum extraction truck operated by Strategic Environmental Services, Inc.

Soil cores were collected continuously during boring advancement using a 5-ft long Geoprobe® Macro-Core® lined with new acetate sleeves. TRC observed soil for visual and/or olfactory evidence of contamination and screened soils for the presence of organic vapors, according to the jar headspace method, using a PID.

TRC collected two or three soil grab samples from each of the 18 borings for EPH analysis to evaluate the extent of petroleum impacts, including LNAPL within the smear zone (noted on the boring logs as containing “viscous oil” or “oil globules”, or as “oil saturated”) at locations B-404 (12 ft), B-406 (11.8 ft and 12.5 ft), B-407 (11.8 ft), B-411 (14 ft), B-412 (11.5 ft and 13 ft), B-413 (14-15 ft), and B-414 (14 ft). In addition, PID readings exceeded 100 parts per million per volume (ppmv) at one location (B-406, 12.5 ft bgs) where LNAPL was noted triggering the collection of one sample for VPH analysis. Samples were placed on ice and shipped to Alpha with a completed chain-of-custody. A summary of environmental samples (including soil) collected are summarized on **Table 2**. Sample results for borings containing LNAPL with micro-scale mobility are presented on **Table 5.**

On December 15, 2016, TRC oversaw advancement of 2-ft long Geoprobe® Macro-Cores® from four borings located beside B-404, B-406, in the vicinity of the former AST perimeter, and at B-412, and B-413, located in the vicinity of the highest observed petroleum impact. Twenty discrete core sections (subcores) were sealed, placed on dry ice, and shipped overnight with a chain-of-custody via Federal Express to PTS Laboratories, Inc. (PTS) of Santa Fe Springs, California. The soil cores were scanned using ultraviolet fluorescence to select 12 subcores for physical properties analysis, which included free product mobility, pore fluid saturation, and oil/water imbibition. Also, four subcores were selected for grain size analysis, LNAPL permeability, and hydraulic conductivity testing.

Four-inch ID monitoring wells were completed at MW-404, MW-412, MW-413 and MW-414 by NEB using conventional hollow-stem auger rig at borings based on the relative presence of petroleum impacts observed during advancement of direct push borings. Two-inch ID monitoring wells were installed in the remaining 14 soil borings completed by NEB.

All 2-inch and 4-inch ID monitoring wells were constructed with Schedule 40 PVC equipped with 15 feet of 10-slot (0.010-inch machine slotted) screen installed in single borings to depths ranging from 20 to 23 ft bgs. A sand filter pack was placed around each well screen and approximately 1 to 2 feet above the top of screen, followed by a 1 to 2 ft (minimum) thick bentonite seal. Each well was protected with a 4-inch diameter locking steel casing equipped with keyed-alike locks set in Quikrete. Wells completed inside the fence included "stickup" well casings, while two wells located outside the fence (MW-416, MW-417) included traffic-rated well covers, flush with ground surface.

On December 28-30, 2016, TRC developed all newly installed monitoring wells using a Waterra Hydrolift and Proactive Water Spout pumps and a surge block to remove suspended fine-grained particulates from each well. Well development records are summarized in **Appendix A**.

2.1.6 Groundwater Sampling in January 2017, March 2017, and June 2017

On January 3 through 6, 2017, March 20 through 23, 2017, and June 5 through 7, 2017, TRC completed a groundwater sampling round from all monitoring wells at the Property (MW-201 through MW-206; and MW-400 through MW-417). During the January 2017 round, LNAPL with microscale mobility was removed, to the extent possible, prior to groundwater purging; in contrast, LNAPL with micro-scale mobility was not removed during the March 2017 round to evaluate groundwater quality with and without LNAPL with micro-scale mobility removal.

Groundwater sampling was conducted using low-flow sampling techniques with pump intakes set at the approximate center of the water column in each well. TRC recorded water quality measurements during well purging with flow-through cells (YSI 600 XL). Once water quality parameters stabilized, TRC collected groundwater samples, placed them on ice and sent the samples under a chain-of-custody to Alpha for analysis of VPH and EPH. A summary of groundwater analytical results is presented on **Table 4**.

2.1.7 In-Situ Hydraulic Conductivity Testing

Hydraulic conductivity was calculated from low-flow data collected in January 2017 at wells where the flow rate and drawdown are stable using the method of Robbins et al., 2008. In-situ hydraulic conductivity testing was performed in 19 of 24 existing monitoring wells on the Property. The remaining five wells could not be tested because the depth to water (DTW) measurement was not available, due to the presence of LNAPL (MW-201 and MW-410), or there was zero drawdown (MW-407, MW-414, and MW-417). The in-situ hydraulic conductivity results are summarized in **Table 6.** The January 2017 low-flow sampling sheets and the hydraulic conductivity summary sheets are provided in **Appendix C**.

2.2 Tidal Study

Pressure-sensitive transducers were suspended in existing monitoring wells MW-202, MW-205, MW-206, and MW-417 during a one-week period during December 22 - 29, 2016 to evaluate tidal influence across the Property. The transducers were set to measure and record water levels at 10-minute intervals. On December 29, 2016, TRC retrieved the transducers and downloaded the collected data onto a laptop. The downloaded water level data were compared to tidal cycle data from the Fore River Bridge (Station 8444788) to evaluate the influence of tidal fluctuations on groundwater levels across the Property. Tidal data available from the National Oceanic and Atmospheric Administration (NOAA) was utilized in the evaluation. A Figure presenting groundwater elevation on October 6, 2017 is presented in **Figure 5.** Tidal study data are provided in **Appendix A.**

2.3 Groundwater Gauging and LNAPL Recovery

Since July 2016, TRC has conducted monitoring and maintenance of on Property monitoring wells. Monitoring has included gauging DTW and depth to product (DTP) in monitoring wells using an oil/water interface probe. New absorbent socks were deployed in each well with observed LNAPL to attempt to recover LNAPL with micro-scale mobility. Upon sock retrieval, TRC personnel noted the relative saturation of the sock and placed the soiled sock into a drum located within the fenced North Parcel of the Property. Additional observed LNAPL with micro-scale mobility was then removed, to the extent feasible with a bailer, and a new sock placed in the well. Petroleum product and associated purge water from monitoring MW-201 was then placed into a drum for off-site disposal.

After October 27, 2016, LNAPL recovery using the passive sock recovery method was discontinued, to monitor LNAPL with micro-scale mobility thickness in preparation for conducting skimming tests and in an effort to collect a sufficient volume of LNAPL for additional laboratory analysis. TRC collected LNAPL from the Disposal Site monitoring wells for laboratory viscosity and density analysis (detailed below) on January 3, 5 and 17, 2017 and on February 13, 2017. These samples were collected to support the LNAPL permeability tests and provide additional LNAPL property characteristics as requested by the LNAPL specialty laboratory, PTS.

Manual skimming tests were initiated on April 17, 2017 at monitoring well MW-414 and attempted then discontinued at monitoring wells MW-201 and MW-410 due to insufficient recovery and lack

of a sufficient thickness of LNAPL with micro-scale mobility, respectively. Product recovery using 2-foot long LNAPL absorbent socks was continued at monitoring well MW-201, and started at monitoring wells MW-410, MW-406 and MW-407. The skimming test was continued at monitoring well MW-414 through May 1, 2017.

On January 5 and 17, 2017, LNAPL was collected from monitoring wells MW-201, MW-410, and MW-414 for Three-Point Viscosity and Density analysis by PTS. A sufficient volume as required by PTS for analysis of LNAPL with micro-scale mobility was collected from monitoring well MW-201 on January 5 and 17, 2017, and submitted under a chain-of-custody to PTS on January 18, 2017. Because insufficient sample volume was recovered from monitoring wells MW-410 and MW-414, samples could not be submitted to PTS for LNAPL property characteristics from these wells.

On February 13, 2017, PTS communicated to TRC that only 10 milliliters (ml) remained after testing of the MW-201 LNAPL properties, and requested TRC to collect an additional 0.5-1 liter of LNAPL. On February 14, 2017, after completing a gauging event, 300 ml was recovered from monitoring well MW-201, and this was combined with approximately 420 ml from monitoring well MW-410, and 230 ml from monitoring well MW-414, and shipped under a chain-of-custody to PTS, which was received intact on February 15, 2017. In PTS's response for the additional LNAPL request, PTS stated:

> "The problem we are having is due to the high viscosity and sticky nature of the NAPL; every time we transfer it to another piece of glassware or equipment, we lose a significant portion that we are unable to recapture due to holdup in the instrument chamber/or vessel. The original volume would have been more than sufficient for the tests scheduled if it was a product of lower viscosity." (PTS communication 2/13/17).

PTS had requested the additional volume to support completing the remainder of the Oil/Water Capillary Pressure tests to further evaluate the LNAPL properties.

The gauging data and the volume and dates of LNAPL recovery are included in **Table 7**.

2.4 LNAPL Recoverability

On April 19, 2017, LNAPL recoverability skimming tests were attempted at three monitoring wells (MW-201, MW-410, MW-414) at the Disposal Site to estimate LNAPL transmissivity (Tn) in-situ. The performance of manual skimming tests is believed to be closely comparable to those of a recovery skimming pump. These wells were selected based on review of the gauging table, which indicated a slightly elevated product thickness. A manual skimming test at monitoring well MW-414 which had the most LNAPL with micro-scale mobility was initiated first, followed by monitoring wells MW-201 and MW-410.

Product recovery was slow in monitoring well MW-414, therefore, manual skimming tests were started at monitoring wells MW-201 and MW-414, while product thickness recovered in monitoring well MW-414. LNAPL recovery at all three locations was performed using a Solinst peristaltic pump

equipped with ½-inch by 5/8-inch tubing, and pumping was set at its maximum rate. LNAPL recoverability was determined to not be feasible at monitoring wells MW-201 and MW-410 because of the limited LNAPL thickness and the high viscosity of the LNAPL. Sufficient LNAPL thickness was present in monitoring well MW-414, therefore, a manual skimming test was performed in this well following ASTM E2856-13 Standard Guide for Estimation of LNAPL Transmissivity (ASTM, 2013). Assumptions within ASTM E2856-13 include equilibrium hydraulic conditions and steady-state LNAPL flow during testing, however, these assumptions could not be achieved at the Disposal Site conditions due to tidal influence; therefore, the measured LNAPL Tn values are considered to be approximate. The LNAPL Tn field data sheets are provided in **Appendix A**, and Tn calculations are provided in **Appendix C**.

3.0 INVESTIGATIVE AND MONITORING DATA [310 CMR 40.0427(4)(c)]

Investigative and monitoring data obtained during implementation of the IRA are summarized below.

3.1 Results of Soil Boring/Sampling Activities

Observations made during soil boring advancement indicate the presence of petroleum impacts in several of the borings and in monitoring wells proximate to the former 11,256,000-gallon No. 2 Fuel Oil AST. The following observations were noted:

- The depth to the top of observed petroleum-containing soils ranges from approximately 10 ft bgs at B/MW-201 to 12.6 feet below grade at B/MW-411.
- The extent of LNAPL is bounded by monitoring wells located on the Disposal Site and Property at greater distances from the AST boundary, including monitoring wells MW-416 and MW-417 located beyond the fence line.

Based on the data collected, the following information was noted:

- EPH concentrations were detected exceeding MCP applicable Method 1 Category S-2/GW-3 criteria at B-105, B/MW-201, B-317, B-407, B-410, B-413, and B-415.
- LNAPL with micro-scale mobility within the smear zone (noted on the boring logs as containing "viscous oil" or "oil globules", or as "oil saturated") was observed at locationsB-404 (12 ft), B-406 (11.8 ft and 12.5 ft), B-407 (11.8 ft), B-411 (14 ft), B-412 (11.5 ft and 13 ft), B-413 (14-15 ft), and at B-414 (14 ft).
- In the remaining soil samples, EPH concentrations did not exceed the Method 1 S-2/GW-3 criteria.
- VPH concentrations in soil samples did not exceed the S-2/GW-3 criteria.

Soil samples collected are summarized on **Table 2**. Soil analytical results are summarized in **Table 3**. In addition, as identified in the MassDEP LNAPL Policy #WSC-16-450 (MassDEP, 2016) **Table**

3 also includes calculated total petroleum hydrocarbons (TPH) concentrations (sum of the detectable EPH and VPH fractions and target analyte concentrations). **Table 5** includes sample results for borings containing LNAPL with micro-scale mobility. Observations during soil boring advancement are included in the boring/monitoring well logs in **Appendix A**. Laboratory analytical reports are provided in **Appendix B**.

3.2 Chemical and Physical Properties of LNAPL

The results of LNAPL physical properties based on Alpha and PTS results are provided in **Appendix B** and summarized below:

- **LNAPL liquid** consists primarily of EPH long chain C19-C36 aliphatic and C11-C22 aromatic compounds, and is a viscous, weathered, high molecular weight No. 2 Fuel Oil.
    - The VPH analytical results indicated the detection of C9-C12 Aliphatics at 730 mg/kg and C9-C10 Aromatics at 1,390 mg/kg. C5-C8 Aliphatics, and VPH target analytes (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) were not detected.
    - The EPH results indicated the detection of C9-C18 Aliphatics at 58,700 mg/kg, C19-C36 Aliphatics at 93,200 mg/kg, and C11-C22 Aromatics at 93,200 mg/kg. EPH target analytes (PAHs) were not detected.
- **LNAPL dynamic viscosity** between 43,600 centipoise (cP) at 50^{o}F. and 10,400cP) at 70^{o}F (temperature range observed during seasonal groundwater sampling) is three to four orders of magnitude from the cutoff point for significant migration of 2-3 centistokes (cSt) (Cole, 1994).
- **LNAPL kinematic viscosity** is approximately 10,700 cSt at 70^{o}F, which is two orders of magnitude greater than the viscosity of light fuel oil (No. 1 and No. 2) reported as 1.4 to 3.6 cSt at 70^{o}F (Riddick et al., 1986). This indicates the LNAPL at the Disposal Site (No. Fuel Oil) has undergone significant weathering. For comparison, the reported viscosity of lubricating oil is 400 to 600 cSt at 70^{o}F (Riddick et al., 1986).

3.2.1 Physical Properties of Soil Containing LNAPL

- **Soil Particle Size** results indicated three of the four samples contained 37.4 to 76.88% gravel, 8.61 to 20.57% coarse sand, 9.69 to 24.74% medium sand, 3.72 to 14.21% fine sand, and 1.1 to 5.65% silt/clay. These samples are associated with Historic Fill materials (coal, coal ash, and cinders), as defined by the MCP and located throughout the Property where residual LNAPL has been observed. The presence of Historic Fill is detailed in the Permanent Solutions with Conditions Statement (PSCS). The remaining sample, collected from B-406A from 12.6 to 12.8 ft bgs was comprised of 15.77% medium sand, 79% fine sand, and 4.35% silt/clay, and less than 1% gravel and coarse sand combined. These results confirm visual observations in the adjacent boring logs.

- **Specific permeability to water** in three of the four soil subcores ranged from 6,790 millidarcy at 14.5 ft bgs in B413A to 7,950 millidarcy at 12.5 ft bgs in B412A, while in the remaining sample, it was an order of magnitude lower at 703 millidarcy at 11.4 ft bgs in B406A.

- **Hydraulic conductivity** in three of the four subcores ranged from 0.00672 centimeters per second (cm/s) at 14.5 ft in B413A to 0.00789 cm/s at 12.5 ft in B412A, and an order of magnitude lower than 0.000699 cm/s at 11.4 ft in the remaining sample that was collected from B406A, which consisted of mostly fine sand. In comparison, the in-situ hydraulic conductivity (K) results were an order of magnitude higher (0.003 to 0.037 cm/s), which are representative of K in the horizontal direction (Kh), while the laboratory hydraulic conductivity was determined in vertical cores, which are representative of K in the vertical direction (Kv).

- **Specific permeability to LNAPL (**LNAPL from the Disposal Site) ranged from 18,000 to 23,700 millidarcy in three of the four subcores that consisted of sand and gravel, and only 491 millidarcy in the remaining subcore sample from B406A that consisted of fine-medium sand.

3.2.2 Pore Fluid Saturation Results

- **Soil Moisture Content** (% weight) ranged from 17.5% at 12.1 ft bgs in B406A to 31.9% at 12.1 ft bgs in B412A.

- **Soil Dry bulk density** ranges from 1.05 grams per cubic centimeter (g/cc) at 11.0 ft bgs at B406A to 1.62 g/cc at 12.1 ft bgs at B406A.

- **Soil Grain density** ranged from 2.30 g/cc at 14.1 ft bgs at B404A to 2.68 g/cc at 14.1 ft bgs at B406A.

- **Soil Total Porosity** ranged from 37.8% at 12.1 ft bgs in B406A to 55.9% at 11.0 ft bgs at B406A.

- **Soil Air-Filled Porosity** ranged from 6.5% at 12.1 ft bgs in B412A to 31% at 11.0 ft bgs at B406A.

- **Soil Water Saturation** ranged from 28.4 to 65.7% of pore volume.

- **Soil LNAPL Saturation** ranged from 2.0 to 40.1% of pore volume.

3.2.3 Free Product Mobility: Initial and Residual Saturations

- **Centrifuging at 30 times gravity (30xG) for simulating 30 days of gravity drainage** decreased LNAPL less than approximately 3% in 83% (10 of 12 samples), and in the remaining samples, LNAPL decreased 12.7% at B406A (14.3 ft bgs) and 27.8% at B406A (12.3 ft bgs). Dark brown LNAPL was produced in one sample from each boring, and trace LNAPL was observed in one sample from three of the borings.

- These results support LNAPL has limited mobility under laboratory simulated conditions of 30 days, at higher temperature, where the LNAPL is less viscous and more mobile. Therefore, these results are very conservative and biased toward mobility.

3.2.4 Oil/Water Capillary Pressure - Source Vicinity Borings

In the source vicinity borings (B412A and B413A), initial oil saturations ranged from 8.6 to 16.4% at B412A and 26.9 to 42.7% at B413A. At the terminus of the imbibition curve:

- B412A – LNAPL residual saturation was 25% (vs. 16.4% initial NAPL saturation) at 12.5 ft, 26% (vs 8.6 % initial) at 14.5 ft, and 29.5% (vs. 11.1% initial) at 16.45 ft.

- B413A - LNAPL residual saturation was 29% (vs. 27.8% initial) at 12.5 ft, 29.8% (vs. 26.9% initial) at 14.5 ft, and 22.3% (vs. 42.7% initial) at 16.5 ft.

If the initial LNAPL saturation exceeds the residual saturation, free phase LNAPL can theoretically occur. The results indicated only one of six samples in the source vicinity, specifically at B413A at 16.5 feet has the potential to generate free phase LNAPL.

3.2.5 Oil/Water Capillary Pressure - LNAPL Margin Borings

In the LNAPL Margin Borings (B404A and B-406A), initial oil saturations ranged from 35.2 to 3.5% at B404A, and ranged from 11.8 to 31.6% at B406A. The results indicated:

- B404A – LNAPL residual saturation was estimated to be below 49.5% (vs. 35.2% initial) at 10.7 ft, 32.5 % (vs. 21.1% initial) at 12.5 ft, and 16.5% (vs. 3.5% initial) at 14.5 ft.

- B406A - LNAPL residual saturation was 22.9% (vs. 11.8% initial) at 11.4 ft, 43% (vs. 27.0% initial) at 12.5 ft, and 31% (vs. 31.6% initial) at 14.5 ft.

- For the subcores located in the vicinity of the LNAPL margin, the results indicated only one of six samples, specifically at B406A at 14.5 feet, showed the potential to generate LNAPL with micro-scale mobility. The other five exhibited residual saturation.

In summary, the oil/water capillary pressure tests indicated the initial saturation in most (10 of 12) samples was below residual saturation, and the remaining two samples were slightly above residual saturation. These results are consistent with LNAPL demonstrating micro-scale mobility.

3.3 Estimated Thickness of Petroleum-Containing Soil

Petroleum-containing soil observed in split spoon samples retrieved from borings ranged in estimated thickness from 0.2 to 6 feet, averaging 3.3 ft. Petroleum-containing soil thickness is greatest ranging from 5 to 6 ft beneath the central portion of the former Fuel Oil AST at borings B-105, MW-201, B-305, B-309, B-311, B-312, MW-412, and MW-413, decreasing to less than 2 feet near the former AST perimeter, with the exception to the southwest of the Fuel Oil AST perimeter (B-319, B-406, B-407, and B-414) where petroleum-containing soil thickness is estimated to range from 2.5 to 3.6 ft.

Within the layer of petroleum-containing soil, LNAPL is present within the smear zone. These LNAPL intervals contain oil globules and separate phase product as described above and in Section 2. Table 5 includes sample results for borings containing LNAPL. LNAPL on groundwater is bounded by monitoring wells located beyond these areas. Observed petroleum-containing soil thickness observations and calculated soil TPH concentrations are summarized in Table 8 as identified in the MassDEP LNAPL Policy #WSC-16-450 (MassDEP, 2016).

3.4 Results of Groundwater Sampling Activities

Based on the results of the five seasonal groundwater sampling rounds (August 2016, November 2016, January 2017, March 2017, and June 2017), VPH and EPH analytes have not exceeded applicable MCP Method 1 GW-2 and GW-3 criteria at the Disposal Site and the Property.

- The August 2016 sampling round of analytical results indicated VPH and EPH hydrocarbon fractions and target analytes were not detected in samples collected from monitoring wells MW-201 through MW-205. These results (less than laboratory reporting limits) are well below applicable MCP Method 1 GW-2 and GW-3 criteria.

- The November 2016 sampling round of analytical results indicated VPH and EPH hydrocarbon fractions and target analytes were not detected in samples collected from monitoring wells MW-201 through MW-206. These results (less than laboratory reporting limits) are well below applicable MCP Method 1 GW-2 and GW-3 criteria.

- The January 2017 sampling round of analytical results indicated C11-C22 Aromatics were detected at 188 micrograms per liter (ug/L) at monitoring well MW-414 and 102 ug/L at monitoring well MW-412 (duplicate sample indicated not detected at the 100 ug/L laboratory reporting limit). These results (most which were below the laboratory reporting limits) are well below applicable MCP Method 1 GW-2 and GW-3 criteria.

- The March 2017 sampling round of analytical results indicated the detection of low concentrations of ethyl benzene (3.22 ug/L [3.11 ug/L – duplicate]), naphthalene (6.66 ug/L

[6.72 ug/L – duplicate]), and C11-C22 Aromatics (102 ug/L (duplicate sample indicated not detected at the 100 ug/L laboratory reporting limit) at monitoring well MW-406. Low levels of C19-C36 Aliphatics were detected at 223 ug/L at monitoring well MW-404. Low levels of C11-C22 Aromatics were also detected at monitoring wells MW-410 (125 ug/L) and MW-414 (105 ug/L). These results (most which were below the laboratory reporting limits) are well below applicable MCP Method 1 GW-2 and GW-3 criteria.

- The June 2017 sampling round of analytical results indicated the detection of low concentrations of C9-C10 Aromatics (68.3 ug/L), naphthalene (7.57 ug/L), and C11-12 Aromatics (178 ug/L) at monitoring well MW-407, and C9-12 Aliphatics (58.3 ug/L) and C11-22 Aromatics (131 ug/L) at monitoring well MW-414. These results (most which were below the laboratory reporting limits) are well below applicable MCP Method GW-2 and GW-3 criteria.

The groundwater analytical results and applicable MCP Method 1 GW-2 and GW-3 criteria are presented in **Table 4.** A copy of the analytical laboratory reports is included in **Appendix B.**

3.5 In-Situ Hydraulic Conductivity

Horizontal hydraulic conductivity (Kh) ranged from approximately 8.5 ft/day (3.0×10^{-3} cm/s) to 105 feet/day (3.7×10^{-2} cm/s), and averaged (geometric mean) approximately 28 ft/day (1×10^{-2} cm/s), which is representative of sand and gravel fill materials observed at the Property. In-situ Kh estimates from low flow data are summarized in **Table 5**. The in-situ K calculation sheets are provided in **Appendix C.**

3.6 Tidal Study

A tidal study was performed over a one-week period (December 22-29, 2016) to evaluate the potential influence of tidal fluctuations on groundwater levels in the vicinity of the Disposal Site. The transducer-collected water level data from monitoring wells MW-202, MW-205, MW-206, and MW-417, located around the Property, were compared against tidal elevations at the nearby Fore River Bridge (Station 8444788) in **Figure 4**. During the tidal study, the tide fluctuation at Fore River Bridge was approximately 10 feet from low to high tide. The changing tidal elevation appears to have had limited influence at monitoring wells MW-202, MW-205, and MW-417 and essentially no influence at monitoring well MW-206.

Correction of the transducer and tidal data indicated the average lag time between low tide and high tide at the Fore River Bridge and corresponding low and high water levels at monitoring wells MW-202 and MW-205 was 477 minutes, while the average lag at monitoring well MW-417 was 438 minutes. The average difference between high and low water levels influenced by the tide at monitoring wells MW-417, MW-202 and MW-205 was approximately 0.11, 0.14, and 0.31 foot, respectively. These results indicate the lag time varies across the Property, and the tidal influence is limited to a few tenths of a foot between high and low tides. The tidal study data are provided in **Appendix A**.

3.7 Results of Gauging and LNAPL with Micro-Scale Mobility Recovery

Historically, LNAPL with micro-scale mobility was observed primarily in five monitoring wells (MW-201, MW-406, MW-407, MW-410, and MW-414) and in monitoring well MW-415 prior to February 27, 2017 only. The physical nature of the LNAPL, including the viscous sticky nature of the weathered oil, has made measurement of the thickness of the product difficult, as the material coats the oil/water interface probe so that an accurate reading of the DTW beneath the oil requires multiple measurements and probe cleaning in between measurements to obtain reproducible results.

Recovery of LNAPL with micro-scale mobility using pumps and bailers (both PVC and stainless steel) is not feasible and limited to using absorbent socks. However, even absorbent socks do not adequately remove the LNAPL with micro-scale mobility as they tended to get stuck on top of the oil due to the high viscosity of the LNAPL Therefore a steel rod was attached to the sock to submerge the sock into the LNAPL for absorption purposes. Weekly DTP and DTW gauging data are summarized in **Table 7.**

3.7.1 LNAPL with Micro-scale Mobility Observations in Monitoring Wells

The thickness of LNAPL with micro-scale mobility fluctuated at each monitoring well. The maximum LNAPL with micro-scale mobility accumulation observed was approximately 1.39 ft at monitoring well MW-414 and 1.24 ft at monitoring well MW-201 both on April 17, 2017. This buildup occurred after removal of the LNAPL absorbent sock from monitoring well MW-201 on November 10, 2017 and after completion and development of monitoring well MW-414 on December 21, 2017.

Absorbent socks were not deployed during this time frame to allow time for LNAPL to potentially accumulate in Disposal Site monitoring wells to a sufficient thickness to perform manual skimming tests. The thickness of LNAPL with micro-scale mobility was reduced at monitoring well MW-414 during performance of the skimming test from April 17, 2017 through May 1, 2017, and the attempted skimming test at monitoring well MW-201 on April 17, 2017. Absorbent socks were placed in monitoring wells (MW-201, MW-406, MW-407, MW-410, and MW-415) on April 18, 2017, and in monitoring well MW-414 after completion of the skimming test on May 1, 2017. Gauging was performed after sock removal, and before a new sock was deployed in each monitoring well where LNAPL with micro-scale mobility was observed. Details of sock deployment/removal, and LNAPL removal are summarized on **Table 7**.

After the groundwater sampling event on June 5-7, 2017, the thickness of LNAPL with micro-scale mobility was measured in monitoring wells on June 13, June 19, and October 6, 2017 to evaluate seasonal changes. Although precipitation may influence short term variations in water table elevations at the Property, water levels at the Property have been shown to be governed by tidal influences and not by seasonal precipitation patterns. It is not expected that there would be a seasonal component to water level elevations at the Property.

The thickness of LNAPL with micro-scale mobility was compared to the groundwater table elevation in the five monitoring wells after sock deployment was discontinued on June 6, 2017 (see **Figure 3)**.

Figure 3 illustrates a negative relationship between LNAPL thickness and groundwater elevation (i.e., decreases in groundwater elevation correspond to increased LNAPL thickness in the measured monitoring wells) which is a well-established relationship. Thus, because ocean elevation governs groundwater elevations at the Property and ocean elevation does not vary seasonally, it would not be expected that there is a seasonal component to LNAPL thickness at the Disposal Site.

On June 13, 2017, the thickness of LNAPL with micro-scale mobility ranged from 0.01 to 0.04 ft. Six days later, on June 19, 2017, the thickness of LNAPL with micro-scale mobility was approximately 0.01 feet in four monitoring wells and 0.06 ft in monitoring well MW-414. Approximately three months later, on October 6, 2017, the thickness of LNAPL with micro-scale mobility increased to 0.51 ft in monitoring well MW-201, 0.31 ft in monitoring MW-406, 0.24 ft in monitoring well MW-407, 0.48 ft in monitoring well MW-410, and 1.04 ft in monitoring well MW-414. Increases in the thickness of LNAPL with micro-scale mobility in monitoring wells is expected over time as the monitoring wells collect LNAPL with micro-scale mobility as they are screened opposite soils containing the weathered No. 2 Fuel Oil and under some conditions may preferentially accumulate LNAPL. LNAPL with micro-scale mobility observed in the five monitoring wells (MW-201, MW-406, MW-407, MW-410, and MW-414) generally exhibited greater thickness of LNAPL with micro-scale mobility at lower groundwater elevations, and lower thickness of LNAPL with micro-scale mobility at higher groundwater elevations. Gauging data are summarized in **Table 7**.

3.7.2 LNAPL Transmissivity Testing Results

The results of LNAPL transmissivity testing follows:

- At monitoring well MW-201, LNAPL thickness was measured as approximately 1.24 ft, however, significant manual (e.g., staff forcibly pushed the tubing into the monitoring well) force was required to penetrate the LNAPL with the ½ x 5/8 inch rigid polyethylene tubing. After pumping started, LNAPL globules were recovered. Because LNAPL recovery was limited to approximately 4 ounces of LNAPL with 14 quarts of groundwater, LNAPL recovery was deemed infeasible.

- At monitoring well MW-410, LNAPL was approximately 0.10 ft thick, and the product appeared to be highly viscous like that observed at monitoring well MW-201; therefore, LNAPL recovery was also deemed infeasible since it was not recoverable. Both monitoring wells MW-201 and MW-410 are located beneath the central portion of the former AST.

- At monitoring well MW-414, LNAPL was measured as approximately 1.39 feet thick, and appeared to be recoverable, therefore, a skimming test was conducted at this monitoring well. The results of the LNAPL Skimming test at monitoring well MW-414 indicated Tn is estimated to be 0.0027 ft^2/day, which is well below the ASTM 2856 criterion of 0.8 ft^2/day, which supports **it is infeasible to recover LNAPL using hydraulic or vacuum methods**, as indicated in the MassDEP LNAPL Policy #WSC-16-450 (MassDEP, 2016). These results, while approximate, clearly indicated, along with sock retrieval observations and attempts to

pump LNAPL, support that hydraulic or vacuum LNAPL recovery at the Disposal Site is not feasible.

3.8 Groundwater Contour Map – May 1, 2017

A representative seasonal high groundwater contour map based on the May 1, 2017 gauging data, corrected for the presence of LNAPL with micro-scale mobility, is shown in **Figure 5**. The interpreted groundwater elevation contours are based on the DTW measurements collected over approximately 3 hours. During that time, the Weymouth Fore River tidal gauge levels were decreasing from 1.13 ft to – 1.23 ft (low-tide), then increased to 1.13 ft relative to the mean low low water (MLLW) datum.

The interpreted configuration of the water table contours indicated groundwater elevations were generally flat, ranging from 2.36 to 2.72 ft NAVD88. The configuration of the groundwater contours suggest groundwater has the potential to flow west toward the Weymouth Fore River. Groundwater elevations were approximately 0.5 to 1 ft higher on May 1, 2017 relative to the gauging on April 25, 2017. According to the nearby NOAA weather Station Weymouth 0.5 NW, MA US GHCND: US1MANF0005 (Elev: 99 ft., Lat: 42.212ºN Lon: 70.951º W), 1.51 inches of rain was recorded between April 26-27, 2017. Infiltration of rain resulted in recharge of the groundwater table at the Disposal Site and the Property.

3.9 Groundwater Contours – October 6, 2017

A representative seasonal low groundwater contour map is shown in **Figure 6** based on the October 6, 2017 gauging data, corrected for the thickness of LNAPL with micro-scale mobility at the five monitoring wells (MW-201, MW-406, MW-407, MW-410, and MW-414) ranged from 0.24 ft to 1.04 ft. As noted earlier, LNAPL thickness measurements are difficult to obtain due to the viscosity of the material and its tendency to "stick" to the oil/water interface probe resulting in overestimated thickness (e.g., LNAPL coating and sticking to the sides of the PVC in the well). The interpreted groundwater elevation contours are based on the DTW measurements collected over a short time frame of approximately 4 hours 14 minutes. During that time, the marine tide at the Weymouth Fore River tidal gauge was ebbing from 1.18 to 10.72 ft MLLW.

The interpreted configuration of the groundwater contours indicated groundwater elevations were generally flat, ranging from 1.60 to 2.03 feet NAVD88 on October 6, 2017. The configuration of the groundwater contours suggest groundwater has the potential to flow west toward the Weymouth Fore River.

4.0 IRA Findings and Conclusions [310 CMR 40.0427(4)(d)]

Findings and conclusions of the IRA are summarized below:

- Release Tracking Number 4-26243 pertains to an MCP 72-hour reporting condition that was triggered due presence of LNAPL greater than 0.5-inch thick in one monitoring well (MW-201).

- The Disposal Site is located on undeveloped Property surrounded by a locked chain-link fence. The Disposal Site appears to be previously used for No. 2 fuel oil storage in an 11,256,000-gallon AST. The source of the LNAPL release(s) appears to be an AST that was removed at least 13 years ago (between December 2004 and April 2005). The exact data of AST removal is unknown. No information about the release was found.

- TRC evaluated conditions in and around the approximate footprint of the former Fuel Oil AST by overseeing the installation of 60 soil borings (across the Property, including 26 soil borings outside the Disposal Site) and 24 monitoring wells. Based on soil and groundwater samples collected to date, the LNAPL is weathered, highly viscous, sticky and the feasibility of recovery is impracticable. LNAPL collected from monitoring well MW-201 is persistent, highly viscous, and fingerprint analysis confirmed it was No. 2 Fuel Oil. The LNAPL consists primarily of EPH long chain C11-C22 aromatic and C9-C36 aliphatic compounds based on VPH and EPH analysis.

- The top of petroleum-containing soil has been observed at a depth ranging from approximately 10 to 12 ft bgs in Historic Fill, as defined by the MCP beneath the vicinity of the former Fuel Oil AST.
- The thickness of petroleum-containing soil ranges from approximately 0 ft (i.e., not observed) to approximately 6 ft in areas beneath the central portion of the former Fuel Oil AST at borings B-105, B-201, B-305, B-309, B-311, B-312, B-412, and B-413.
- LNAPL with micro-scale mobility is predominantly observed in borings located in the area directly beneath or in the immediate vicinity of the approximate location of the former Fuel Oil AST at a depth generally between approximately 10 and 17 feet at seven borings (B-404, B-406, B-407, B-411, B-412, B-413, and B-414) within this depth range.
- The extent of LNAPL with micro-scale mobility beyond the former Fuel Oil AST footprint is within the outer perimeter of monitoring wells, and has not been observed in the outer monitoring wells and not observed off the Property.
- Low concentrations of groundwater containing VPH and EPH hydrocarbon ranges have been infrequently detected. VPH and EPH as well as target analyte groundwater concentrations are well below applicable Method 1 GW-2 and GW-3 groundwater criteria in samples that were collected from the 24 monitoring wells at the Disposal Site and Property between August 2016 and June 2017. This indicates that the petroleum contamination at the Disposal Site is not a significant source of groundwater contamination.

- LNAPL with micro-scale mobility has been observed consistently at five monitoring wells (MW-201, MW-406, MW-407, MW-410, and MW-414). The thickness of LNAPL with micro-scale mobility thickness has been observed to fluctuate within the range of LNAPL with micro-scale mobility thickness values historically observed in monitoring wells at this Disposal Site.

- The extent of the LNAPL and petroleum-containing soil beyond the former Fuel Oil AST footprint is within the outer perimeter of monitoring wells, and have not been observed off the Property.

- Increases in the thickness of LNAPL with micro-scale mobility in monitoring wells are associated with lower groundwater table elevations, and vice versa (e.g., wells are acting as preferential accumulation areas, but LNAPL is not recoverable due to viscosity).

- The results of the LNAPL skimming test at monitoring well MW-414 indicated LNAPL transmissivity of 0.0027 ft^2/day, which is well below the ASTM 2856 criterion for hydraulic or pneumatic recovery of 0.8 ft^2/day. LNAPL transmissivity measurements at the Disposal Site supports it is infeasible to initiate LNAPL removal operations, as indicated in the MassDEP LNAPL Policy #WSC-16-450 (MassDEP, 2016). These results, while approximate, along with sock retrieval observations/oil recovery and attempts to pump and bail the LNAPL clearly support the conclusion that LNAPL recovery at the Disposal Site is not feasible.

- Several lines of evidence support that non-stable LNAPL is not present at the Disposal Site.

    - First, the lack of LNAPL observations in monitoring wells surrounding the five monitoring wells where LNAPL with micro-scale mobility has consistently been observed in all monitoring events since the monitoring wells were installed.
    - Second, the LNAPL was fingerprinted as weathered No. 2 Fuel Oil and physical analysis indicates it is highly viscous and possesses a sticky characteristic.
    - Third, LNAPL with micro-scale mobility recovery from monitoring wells is not feasible using pumps, bailers, and recovery is limited using absorbent socks even weighted with a steel rod to penetrate the oil.
    - Fourth, LNAPL transmissivity values are very low supporting LNAPL recovery is not feasible.
    - Fifth, the source of the LNAPL release(s) appears to be a former Fuel Oil AST that was removed at least 13 years ago (between 2004 and 2005) and LNAPL would be expected to have reach its maximum extent over a much shorter period.
    - Lastly, five rounds of seasonal groundwater samples analyzed for VPH and EPH indicate infrequent detections of low concentrations that do not exceed MCP Method 1 GW-2 and GW-3 standards.

5.0 DESCRIPTION OF ONGOING ACTIVITIES [310 CMR 40.0427(4)(g)]

The results of assessment activities conducted to date indicate the LNAPL at the Disposal Site is comprised of a viscous, weathered No. 2 Fuel Oil that is sticky in nature. The extent of observed soil impacts is near the former Fuel Oil AST, and is bounded by borings and monitoring wells located north, south, east and west of the former Fuel Oil AST where LNAPL impacts have not been observed. Infrequent detections of low VPH and EPH hydrocarbon fractions, and target analyte concentrations are well below applicable MCP Method 1 GW-2 and GW-3 groundwater standards in samples collected in August 2016, November 2016, January 2017, March 2017, and June 2017,

indicating that the LNAPL is not a significant source of groundwater contamination. No additional soil borings and monitoring wells are necessary. Other activities such as security, maintenance of fences, caps and other passive systems, are not applicable or necessary at this Disposal Site. However, the Property remains fenced to deter trespassers.

6.0 MANAGEMENT OF REMEDIATION WASTE [310 CMR 40.0427(4)(e)]

Three types of waste have been generated by activities associated with the assessment activities conducted to date and include: soil cuttings containing evidence of petroleum, oil and water purged or drawn from monitoring wells containing LNAPL, and oily items (e.g., oil-absorbent socks, oil-absorbent pads, nitrile gloves, acetate Macro-Core® sleeves, etc.). TRC placed these materials into separate drums, which were kept within the fenced area of the North Parcel (in a locked trailer) as they were filled. The drums were disposed of off-site by Clean Harbors Environmental Services on behalf of Enbridge. At the time of this report, all drummed wastes have been removed as well as the storage trailer. Applicable shipping documentation (hazardous waste manifests) for the drums generated are included in this IRA Completion Reports. There are no stockpiled wastes at the Disposal Site. A summary of remediation waste generated at the Disposal Site is presented in **Table 9**. A copy of waste shipping documents is provided in **Appendix D**.

7.0 LSP OPINION [310 CMR 40.0427(5)]

The assessment and recovery activities that have been undertaken in performance of this IRA are consistent with the objectives outlined in the IRA Plan and have been designed and performed according to our understanding of the contaminant conditions present at the Disposal Site. The IRA was conducted in conformance with the IRA Plan dated September 2016. This report was submitted with a MassDEP Completion Statement form (BWSC105).

8.0 REFERENCES

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TRC, 2016b. Immediate Response Action Status Report #1, Weymouth Compressor Station, 6 & 50 Bridge Street, Weymouth, Massachusetts, Release Tracking Number 4-26243, prepared by TRC for Spectra Energy Partners, Algonquin Gas Transmission, LLC, November 2016.

TRC, 2017a. Immediate Response Action Status Report #2, Weymouth Compressor Station, 6 & 50 Bridge Street, Weymouth, Massachusetts, Release Tracking Number 4-26243, prepared by TRC for Spectra Energy Partners, Algonquin Gas Transmission, LLC, May 2017.

TRC, 2017b. Phase I Initial Site Investigation, Weymouth Compressor Station, 6 & 50 Bridge Street, Weymouth, Massachusetts, Release Tracking Number 4-26243, prepared by TRC for Enbridge, Algonquin Gas Transmission, LLC, July 2017

TRC, 2017c. Immediate Response Action Status Report #3, Weymouth Compressor Station, 6 & 50 Bridge Street, Weymouth, Massachusetts, Release Tracking Number 4-26243, prepared by TRC for Enbridge, Algonquin Gas Transmission, LLC, November 2017.

FIGURES

LEGEND

○ APPROXIMATE SITE LOCATION

MASS. COORD. SYSTEM
NAD 1983 – MAINLAND ZONE

ATLANTIC BRIDGE PROJECT
WEYMOUTH COMPRESSOR STATION
BRIDGE ST, WEYMOUTH, MA

ENBRIDGE

SITE LOCUS MAP

IRA COMPLETION STATEMENT

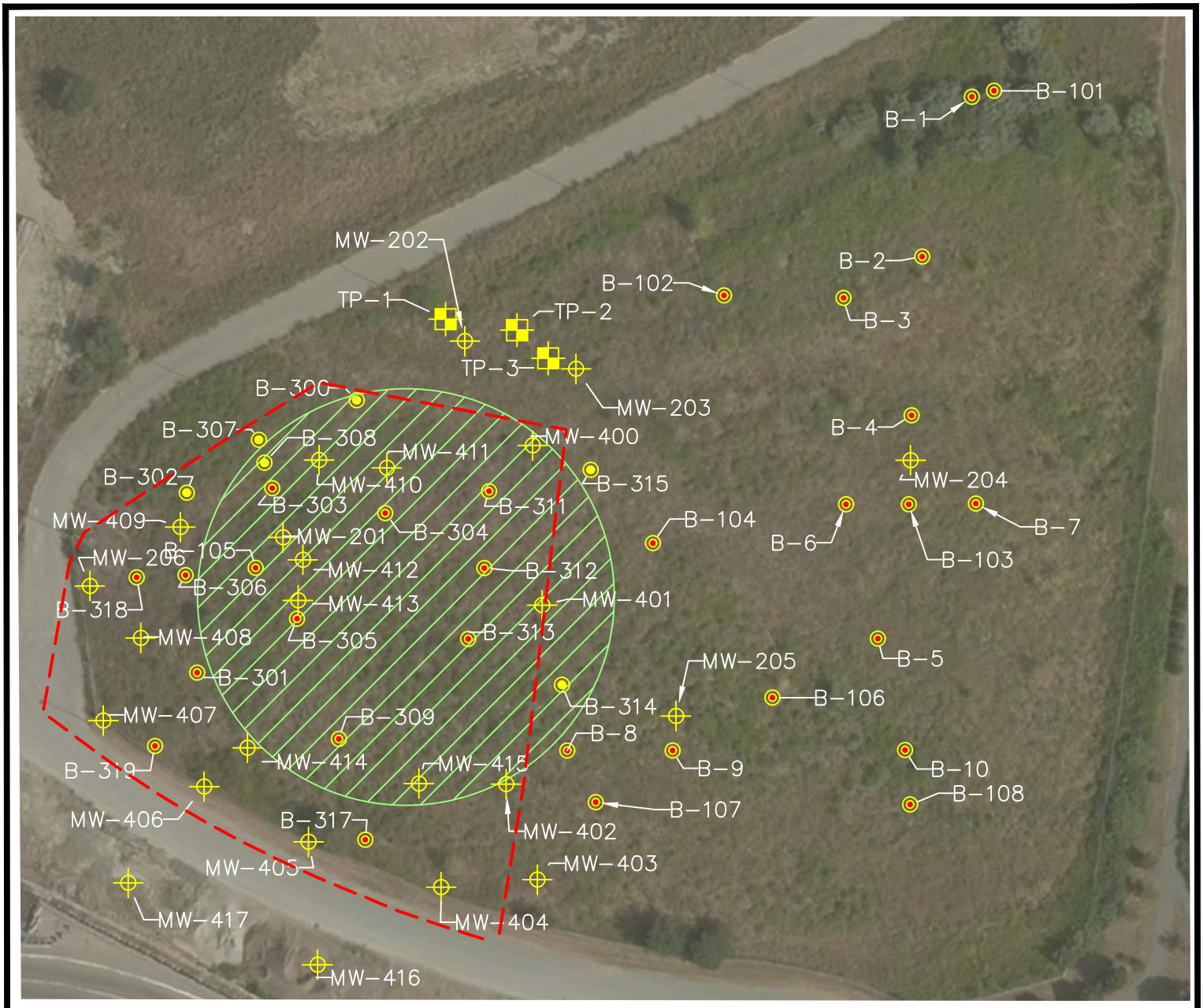
TRC
2 Liberty Sq
6th Floor
Boston, MA 02113
(617)350-3444

FIGURE
1

DRAWN BY: JMM
CHECKED BY: CR

DATE:
MARCH 2018

FILE: J:\140143 – Atlantic Bridge\Weymouth Compressor Station\CAD Files\20171201Boring Plan Jan2017.dwg



SCALE: 1"=70'

0' 35' 70' 140'

LEGEND

- SOIL BORING
- MONITORING WELL
- TEST PIT
- LOCATION: FORMER ABOVE-GROUND STORAGE TANK 11,256,000-GALLON NO. 2 FUEL OIL
- DISPOSAL SITE BOUNDARY

NOTE:
BORING B-316 WAS NOT INSTALLED

MASS. COOR. SYSTEM
NAD 1983 - MAINLAND ZONE

ATLANTIC BRIDGE PROJECT
WEYMOUTH COMPRESSOR STATION
BRIDGE ST, WEYMOUTH, MA

ENBRIDGE

DISPOSAL SITE BOUNDARY
BORING/MONITORING WELL LOCATIONS

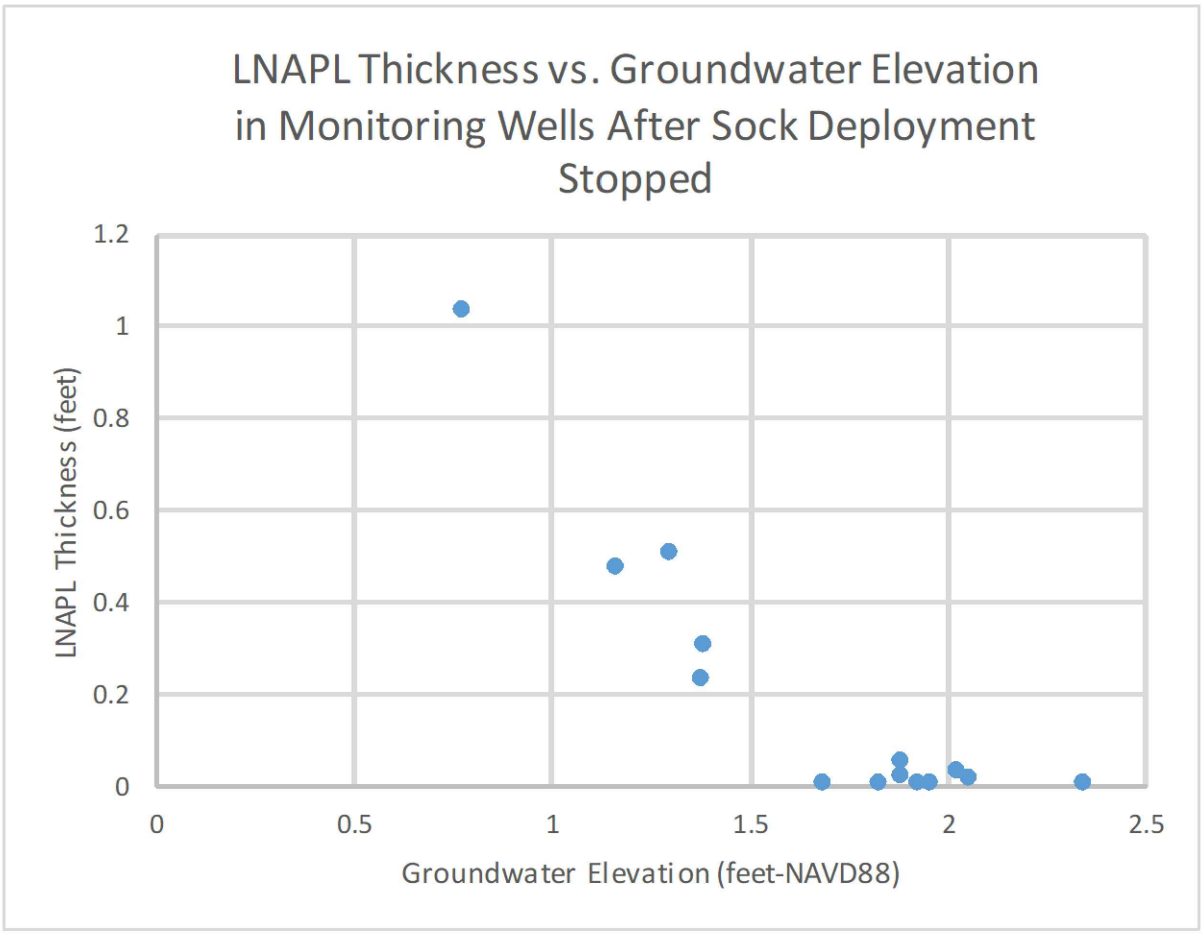
IRA COMPLETION STATEMENT
RTN 4-26243

TRC
2 Liberty Sq
6th Floor
Boston, MA 02113
(617)350-3444

FIGURE 2

DRAWN BY: JMM
CHECKED BY: CR
DATE: MARCH 2018

FILE: J:\140143 - Atlantic Bridge\Weymouth Compressor Station\CAD Files\Boring Plan Jan2018.dwg



LEGEND

NOTE: LNAPL THICKNESS AND GROUNDWATER ELEVATION MEASURED IN MONITORING WELLS MW-201, MW-406, MW-407, MW-410, AND MW-414 ON JUNE 13, 2017, JUNE 19 AND OCTOBER 6, 2017

ATLANTIC BRIDGE PROJECT
WEYMOUTH COMPRESSOR STATION
BRIDGE ST, WEYMOUTH, MA

ENBRIDGE

LNAPL THICKNESS VS. GROUNDWATER ELEVATION IN MONITORING WELLS AFTER SOCK DEPLOYMENT STOPPED ON JUNE 6, 2017

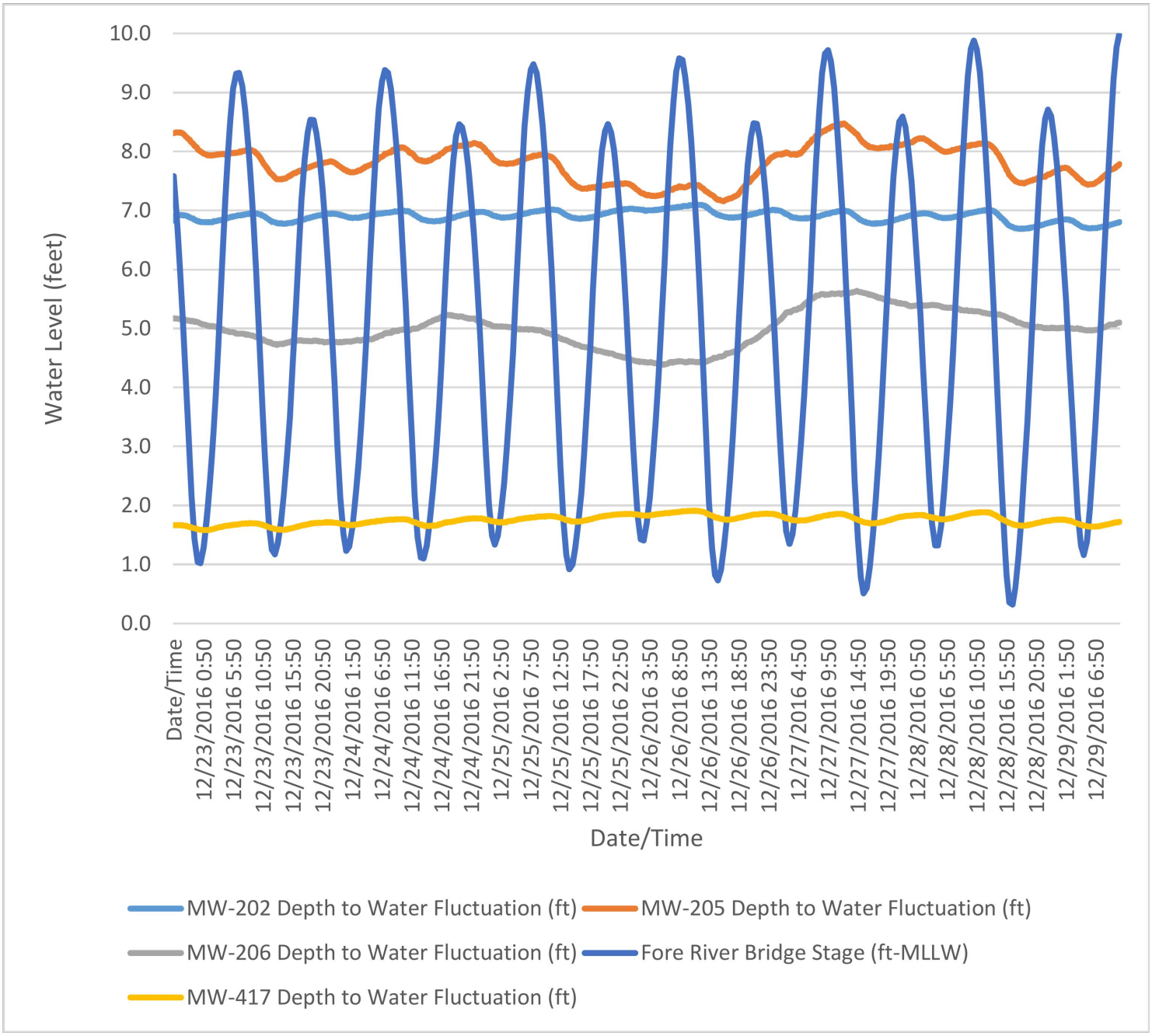
IRA COMPLETION STATEMENT

TRC
2 Liberty Sq
6th Floor
Boston, MA 02113
(617)350-3444

FIGURE 3

DRAWN BY: JMM
CHECKED BY: CR
DATE: MARCH 2018

FILE: J:\140143 - Atlantic Bridge\Weymouth Compressor Station\CAD Files\20171201gwcont.dwg



NOTES:

– THE BLUE CURVE REPRESENTS TIDAL FLUCTUATION AT THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) FORE RIVER STATION (ID 8444788), WHILE THE REMAINING CURVES REPRESENT THE FLUCTUATIONS IN WATER LEVEL IN EACH OF THE MONITORING WELLS.
– THE TIDAL STAGE AT THE FORE RIVER BRIDGE IS RELATIVE TO MEAN LOWER LOW WATER TIDAL DATUM, WHICH DIFFERS FROM THE NORTH AMERICAN VERTICAL DATUM OF 1988 USED FOR GROUNDWATER ELEVATIONS AT THE ATLANTIC BRIDGE WEYMOUTH COMPRESSOR STATION SITE.
– BASED ON THE WATER LEVEL CURVES, THERE ARE VERY SMALL GROUNDWATER LEVEL FLUCTUATIONS RELATIVE TO TIDAL.

SOURCE:
https://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=8444788

ATLANTIC BRIDGE PROJECT
WEYMOUTH COMPRESSOR STATION
BRIDGE ST, WEYMOUTH, MA

ENBRIDGE

TIDAL AND GROUNDWATER LEVEL FLUCTUATIONS

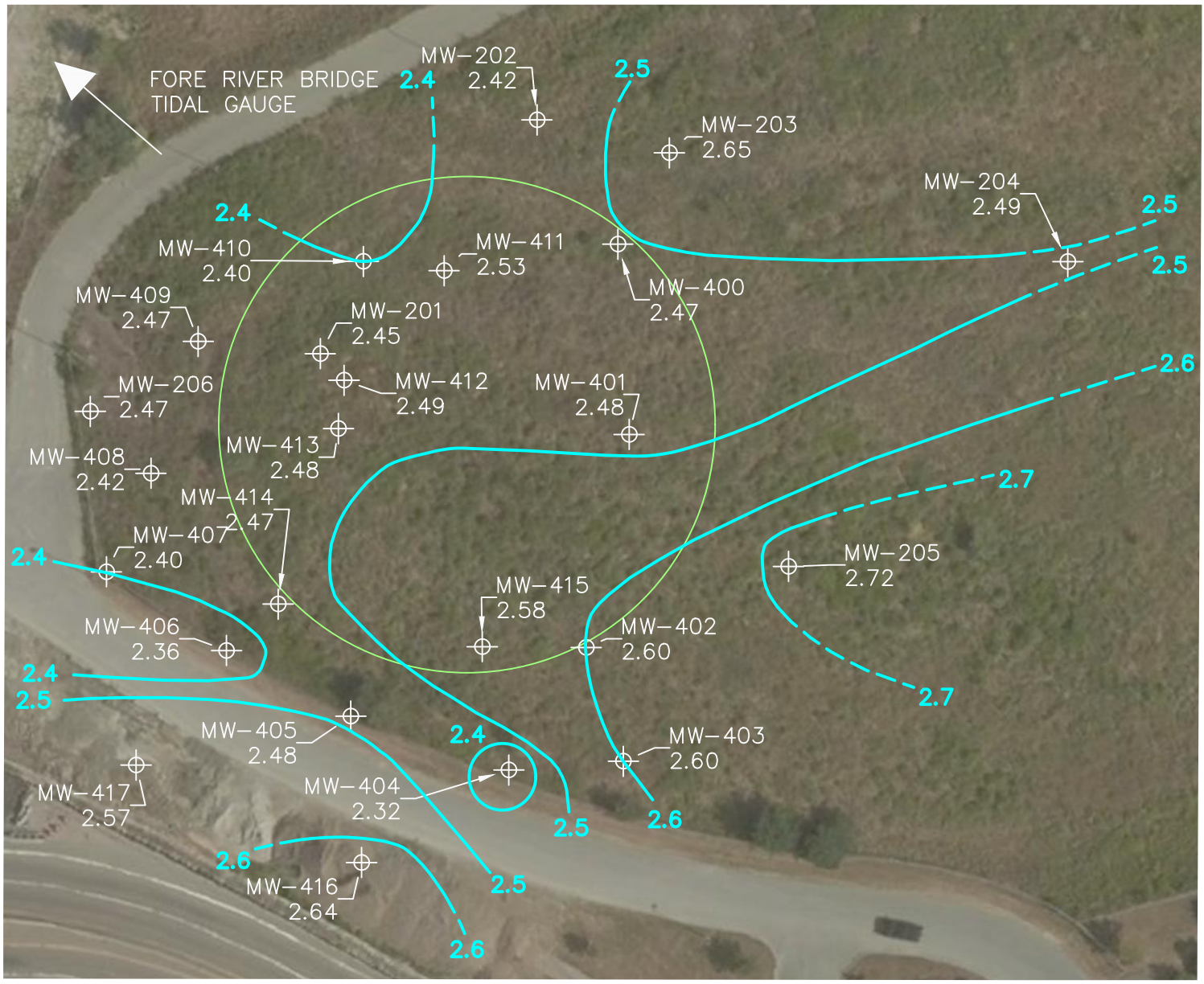
IRA COMPLETION STATEMENT

TRC
2 Liberty Sq
6th Floor
Boston, MA 02113
(617)350-3444

FIGURE
4

DRAWN BY: JMM
CHECKED BY: CR
DATE: MARCH 2018

FILE: J:\140143 – Atlantic Bridge\Weymouth Compressor Station\CAD Files\20171201Boring Plan Jan2017jmm.dwg



LEGEND

- MONITORING WELL
- GROUNDWATER ELEVATION FOR 05/01/2017
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE LOCATION: FORMER ABOVE-GROUND STORAGE TANK 11,256,000-GALLON OF NO. 2 FUEL OIL

SCALE: 1"=60'

0' 30' 60' 120'

NOTES

- TIDAL ELEVATION RANGE FROM -1.23 to 1.13 FEET MEAN LOW LOW WATER DATUM AT WELLS NOT CONTAINING MEASURABLE LNAPL

MASS. COOR. SYSTEM NAD 1983 - MAINLAND ZONE

ATLANTIC BRIDGE PROJECT
WEYMOUTH COMPRESSOR STATION
BRIDGE ST, WEYMOUTH, MA

ENBRIDGE

GROUNDWATER CONTOUR MAP
MAY 1, 2017

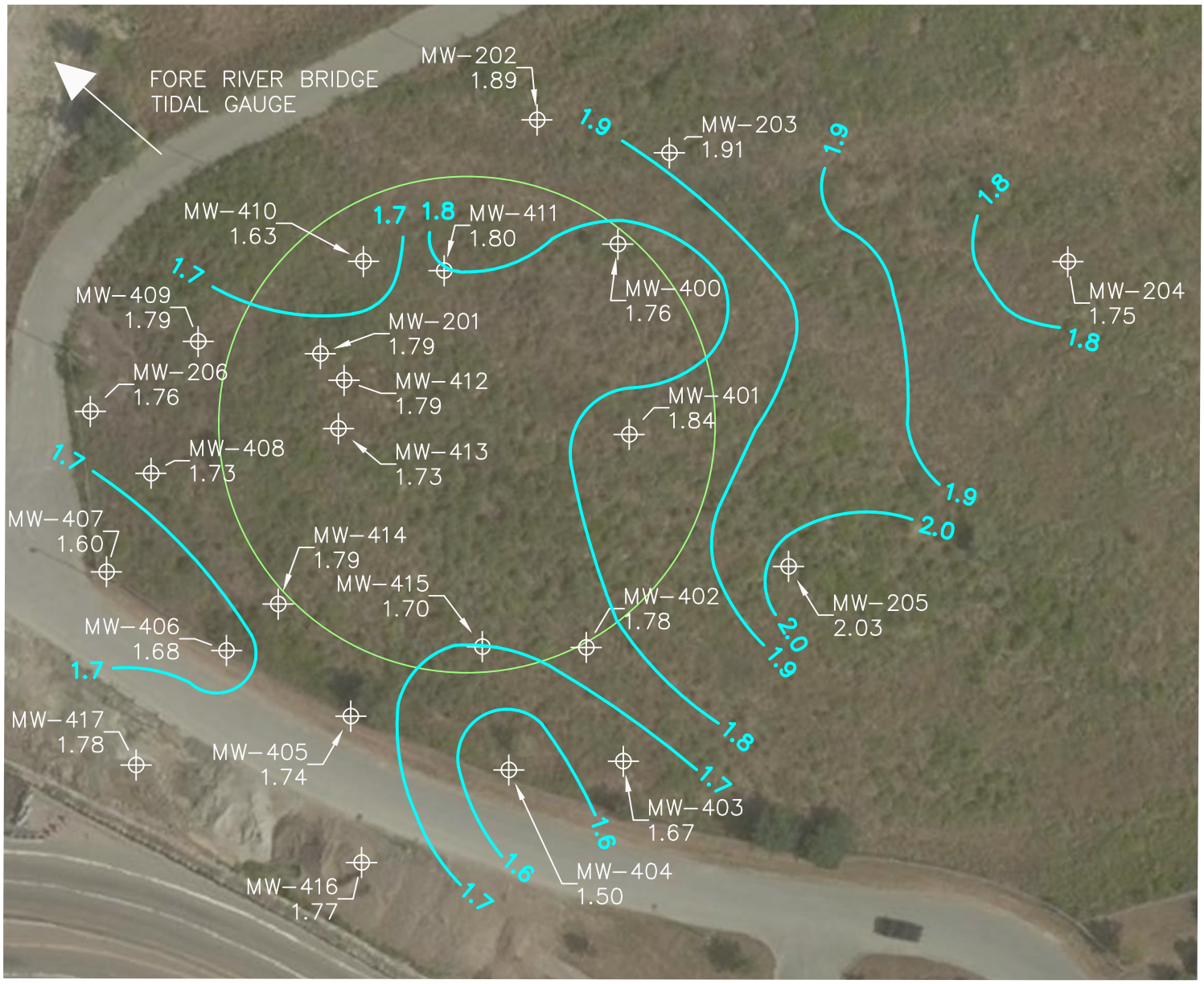
IRA COMPLETION STATEMENT

TRC
2 Liberty Sq
6th Floor
Boston, MA 02113
(617)350-3444

FIGURE 5

DRAWN BY: JMM
CHECKED BY: CR
DATE: MARCH 2018

FILE: J:\140143 - Atlantic Bridge\Weymouth Compressor Station\CAD Files\20171201Boring Plan Jan2017jmm.dwg



LEGEND

MONITORING WELL
GROUNDWATER ELEVATION FOR 10/06/2017
1.85

GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

APPROXIMATE LOCATION:
FORMER ABOVE-GROUND STORAGE TANK
11,256,000-GALLON OF NO. 2 FUEL OIL

NOTES

- TIDAL ELEVATION EBBING FROM 1.18 TO 10.72 FEET MEAN LOW LOW WATER DATUM DURING WATER LEVEL MEASUREMENT

SCALE: 1"=60'

0' 30' 60' 120'

MASS. COOR. SYSTEM
NAD 1983 - MAINLAND ZONE

ATLANTIC BRIDGE PROJECT
WEYMOUTH COMPRESSOR STATION
BRIDGE ST, WEYMOUTH, MA

ENBRIDGE

GROUNDWATER CONTOUR MAP
OCTOBER 6, 2017
RTN 4-26243

IRA COMPLETION STATEMENT

TRC
2 Liberty Sq
6th Floor
Boston, MA 02113
(617)350-3444

FIGURE
6

DRAWN BY: JMM
CHECKED BY: CR
DATE: MARCH 2018

FILE: J:\140143 - Atlantic Bridge\Weymouth Compressor Station\CAD Files\20171110gwcont.dwg

TABLES

Table 1
Summary of Soil Boring Observations, and Monitoring Well Construction
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Boring and Monitoring Well Identification	Ground Elevation (ft-NAVD88)	Boring Depth (ft-bgs)	Well Inside Diameter (in)	Well Screen Depth[1] (ft-bgs)	Vac Rig (Vac) or No Recovery (NR) (ft-bgs)	Topsoil (ft-bgs)	Fine - Coarse Sand, Trace Silt (ft-bgs)	Fill Sand and Silt and/or Gravel (ft-bgs)	Fill Sand/Gravel, Clinkers, Coal, Brick (ft-bgs)	Fill Silt and Sand (ft-bgs)	Fill and/or Natural Fine to Coarse Sand and Gravel or Sand with Trace Gravel and/or Silt (ft-bgs)	Fine Sand, Silt, and/or Clay (ft-bgs)	Observed Top PCS (ft-bgs)	Observed Bottom PCS (ft-bgs)	Approximate PCS Thickness (ft)
B-1	18.40	24	-	-	6 Vac	-	-	-	9 - 21	0-6	21-21.5	22.5-24	0	0	0
B-2	13.60	30	-	-	3 Vac	-	-	-	0-28	-	-	28-30	0	0	0
B-3	13.20	27	-	-	3.4 Vac	-	-	-	0-19	-	19-24.5	24.5-27	0	0	0
B-4	12.70	101	-	-	3.2 Vac	-	-	-	0-24.5	-	-	24.5-101	0	0	0
B-5	13.10	124.3	-	-	4.0 Vac	-	-	-	0-24	-	-	24-101	0	0	0
B-6	12.80	23	-	-	2.2 Vac	-	-	-	0-21.7	-	-	21.7-23	0	0	0
B-7	12.80	25	-	-	3.3 Vac	-	-	-	0-22	-	-	22-25	0	0	0
B-8	14.20	38	-	-	6 Vac, 13-15 NR	-	2-6	-	0-2, 8-13	-	15-35.5	35.5-38	0	0	0
B-9	14.30	36	-	-	6 Vac	-	-	-	0-6	9-19	19-25.8, 29-34	25.8-29, 34-36	0	0	0
B-10	13.90	26	-	-	2.7 Vac	-	-	-	0-13	13-18	-	18-26	0	0	0
B-101	18.70	124	-	-	2.7 Vac	0-0.5	2-2.5	-	9-21	2.5-6	21-21.5	21.5-124	0	0	0
B-102	12.70	104.1	-	-	-	0-0.5	-	-	9-17.5	17.5-27.5	99-104.1	27.5-99	0	0	0
B-103	12.80	80	-	-	-	0-0.5	-	-	8-10	-	0-8, 10-24	24-80	0	0	0
B-104	12.70	111	-	-	-	0-0.5	-	-	24-32.5	-	6-24, 92.5-111	32.5-92.5	0	0	0
B-105[2]	13.00	107.6	-	NA	0-2 Vac	0-0.5	-	10-21	2-10	-	94-107.6	21-94	14	19	6
B-106	13.90	81	-	-	-	0-0.5	-	2-20	-	-	20-47.5	47.5-81	0	0	0
B-107	14.40	109	-	-	-	0-0.5	2-6	13-33	0-2, 8-13	-	99-109	33-99	0	0	0
B-108	14.20	106	-	-	-	0-0.5	-	0-17	-	-	79-106	17-79	0	0	0
B-201/MW-201	13.20	20	2	5-20	0.5-6 Vac	0-0.5	-	-	6-18	-	18-18.6	18.6-19.1	12	18	6
B-202/MW-202	12.00	21	2	4-19	-	0-0.9	-	-	0.9-5.25	-	5.25-20	20-21	0	0	0
B-203/MW-203	12.20	21	2	4-19	-	0-0.3	-	-	0.3-13	-	13-19.7	19.7-21	0	0	0
B-204/MW-204	12.90	20	2	5-20	0-6 Vac	0-0.3	-	6-6.7	6.7-7.4, 14-18	7.4-14	18-20	-	0	0	0
B-205/MW-205	14.40	20	2	5-20	0-6 Vac	0-0.5	-	6-8	8-10	10-12.3	12.3-20	-	0	0	0
B-300	11.59	20	-	-	1.2-5 NR	0-1.2	5-17.5	-	-	-	-	17.5-20	0	0	0
B-301	13.70	15	-	-	0.3-5 NR	0-0.3	-	-	5.3-10.5	5-5.3	10.5-11.7	11.7-15	10.5	11.7	1.2
B-302	12.55	15	-	-	-	0-0.5	0.5-15	-	-	-	-	-	0	0	0
B-303	12.48	15	-	-	-	0-1.2	-	-	5.3-10.7	1.2-5.3	-	10.7-15	10.5	10.7	0.2
B-304	12.68	20	-	-	-	0-1.2	-	1.2-6.2	6.7-16.3	6.2-6.7	-	16.3-20	10.8	12.5	1.7
B-305	13.82	20	-	-	-	0-0.8	0.8-6.5	-	6.5-18	-	-	-	11.2	17	5.8
B-306	12.67	15	-	-	-	0-0.8	-	-	0.8-14.7	-	-	14.7-15	11.8	14.8	3
B-307	12.32	15	-	-	-	0-0.7	-	-	-	-	0.7-15	-	0	0	0
B-308	12.32	15	-	-	0.5-5 NR	0-0.5	10.9-15	-	5.5-6.8	-	6.8-10.9	-	0	0	0
B-309	14.26	20	-	-	-	0-0.5	0.5-7.5	-	7.5-15.5	-	-	15.3-17.5	11.5	16.7	5.2
B-310/MW-206	13.10	15	2	9-19	-	0-1.3	-	-	5-5.2	-	5.2-10.3	10.3-15	0	0	0

Table 1
Summary of Soil Boring Observations, and Monitoring Well Construction
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Boring and Monitoring Well Identification	Ground Elevation (ft-NAVD88)	Boring Depth (ft-bgs)	Well Inside Diameter (in)	Well Screen Depth[1] (ft-bgs)	Vac Rig (Vac) or No Recovery (NR) (ft-bgs)	Topsoil (ft-bgs)	Fine - Coarse Sand, Trace Silt (ft-bgs)	Fill Sand and Silt and/or Gravel (ft-bgs)	Fill Sand/Gravel, Clinkers, Coal, Brick (ft-bgs)	Fill Silt and Sand (ft-bgs)	Fill and/or Natural Fine to Coarse Sand and Gravel or Sand with Trace Gravel and/or Silt (ft-bgs)	Fine Sand, Silt, and/or Clay (ft-bgs)	Observed Top PCS (ft-bgs)	Observed Bottom PCS (ft-bgs)	Approximate PCS Thickness (ft)
B-311	12.58	20	-	-	-	-	0-6	-	6-16.5	-	-	16.5-20	11.3	17.3	6
B-312	13.12	20	-	-	0.9-5 NR	0.0.9	5-7.2	-	7.2-20	-	-	-	11.2	16.7	5.5
B-313	13.91	20	-	-	15-20 NR	0-1.2	1.2-7, 10-13.9	-	7-10	-	-	13.9-14.8	11.3	14	2.7
B-314	13.97	15	-	-	-	0-0.5	0.5-5.7	-	5.7-6.5	6.5-10.7	10.7-12.7	12.7-15	0	0	0
B-315	12.36	15	-	-	-	0-1.3	1.3-5	-	5-10.5, 12.5-15	10.5-12.5	-	-	0	0	0
B-317[3]	13.66	15	-	-	-	0-0.7	0.7-7	-	7-14.7	-	-	14.7-15	11.7	13	1.3
B-318	12.98	15	-	-	-	0-0.7	11.8-13.2	-	0.7-11.8	-	-	13.2-15	10.7	11.2	0.5
B-319	13.34	17	2	-	0.5-5.5 NR	0-0.5	-	10.9-13.4	5.5-10.9	-	-	13.4-15	12.5	15	2.5
B-400/MW-400	12.26	23	2	8-23	-	0-0.3	-	-	0.3-15	-	-	15-23	0	0	0
B-401/MW-401	13.44	23	2	7.6-22.6	-	0-1.2	1.2-8.2	-	8.2-11.3	-	11.3-17.5	17.5-23	0	0	0
B-402/MW-402	14.62	20	2	8-23	-	0-0.5	0.5-8.3	-	8.3-10.8	-	10.8-15	15-20	0	0	0
B-403/MW-403	13.11	30	2	8-23	0-5 Vac	-	5-6.8	-	6.8-8,12.5-30	-	0-5,8.7-12.5	8-8.7	0	0	0
B-404/MW-404	13.06	23	4	5.4-20.4	0-5 Vac	-	2-7.2, 16.3-23	-	7.2-16.3	-	0-2	-	12	12.5	0.5
B-405/MW-405	13.87	21.5	2	6.5-21.5	0-5 Vac	-	2-5, 11.3-21.5	-	5-11.3	-	0-2	-	0	0	0
B-406/MW-406	13.34	23	2	8-23	0-5 Vac	-	10.8-23	-	1-10.8	-	0-1	-	11.5	15	3.5
B-407/MW-407	13.18	20	2	8-23	0-5 Vac	-	10.8-23	-	5-5.8	-	6.3-10.8	5.8-6.3	10.5	13	2.5
B-408/MW-408	13.04	20	2	8-23	-	-	-	-	0.7-11.5	-	0-0.7, 11.5-20	-	0	0	0
B-409/MW-409	12.84	20	2	8-23	-	0-0.5	-	-	0.5-13.1	-	13.1-20	-	0	0	0
B-410/MW-410	12.45	25	2	8-23	-	-	-	-	1.1-15	0.5-1.1	15-20	15-25	11.3	12.8	1.5
B-411/MW-411	12.53	25	2	8-23	-	-	-	-	1-15.8	-	0.5-1	15.8-25	11.1	15.8	4.7
B-412/MW-412	13.61	25	4	8-23	-	-	-	-	5-20.7	2.2-5, 16.5-21.7	0.5-2.2	21.7-25	11.3	16.3	5
B-413/MW-413	13.74	25	4	8-23	-	-	-	-	6.8-21.8	0-1.5	1.5-6.8	21.8-25	11.1	16.6	5.5
B-414/MW-414	14.18	20	4	8-23	-	-	11.4-15	-	2.7-11.4	-	0-2.7, 15-20	-	11.4	15	3.6
B-415/MW-415	14.43	23	2	8-23	-	0-0.5	1.8-8	-	0.5-1.8, 8-21.7	-	-	21.7-23	11.7	16	4.3
B-416/MW-416	13.34	20	2	8-23	0-6 Vac	-	-	-	5-5.5,10-11	11-15	0-5, 5.5-10, 15-20	-	0	0	0
B-417/MW-417	13.34	20	2	8-23	0-6 Vac	-	-	-	5-5.4, 10.6-11.2	11.2-15	0-5, 5.4-10.6, 15-20	-	0	0	0

Abbreviations:
bgs - below ground surface
ft - feet
in - inches
NAVD88 - North American Vertical Datum of 1988
PCS - petroleum-containing soil

Notes:
1. Well screen consists of Schedule 40 polyvinylchloride casing and screen (slot size 0.010 inches).
2. B-105 - LNAPL containing soil thickness estimated between 12 and 18 ft bgs (6 ft thickness) based on observations at MW-201.
3. B-316 does not exist.

Table 2
Summary of Environmental Samples
IRA Completion Report
Atlantic Bridge Project
Weymouth Compressor Station
6 and 50 Bridge Street, Weymouth, Massachusetts

Sample Date	Sample Name	Matrix	Composite/ Grab	Sample Depth (ft-bgs)	Additional Description	Parameters
6/10/2015	COMP-123	Soil	Composite	0-1	Composite of borings B-1, B-2, and B-3 from 0-1 ft	Herbicides, Metals
6/10/2015	COMP-467	Soil	Composite	0-1	Composite of borings B-4, B-6, and B-7 from 0-1 ft	Herbicides, Metals
6/10/2015	COMP-8910	Soil	Composite	0-1	Composite of borings B-8, B-9, and B-10 from 0-1 ft	Herbicides, Metals
6/25/2015	B-1	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-2	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-3	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-4	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-5	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-6	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-7	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-8	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-9	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/25/2015	B-10	Soil	Grab	0-1	Assessed past metals in shallow soil and possible use of herbicides in AST berm area	Herbicides, Metals
6/26/2015	COMP-123-Fill	Soil	Composite	N/A	Composite of Historic Fill soils from borings B-1, B-2, and B-3	EPH, Metals
6/26/2015	COMP-123-Native	Soil	Composite	N/A	Composite of native soils from borings B-1, B-2, and B-3	EPH, Metals
6/26/2015	COMP-467-Fill	Soil	Composite	N/A	Composite of Historic Fill soils from borings B-4, B-6, and B-7	EPH, Metals
6/26/2015	COMP-467-Native	Soil	Composite	N/A	Composite of native soils from borings B-4, B-6, and B-7	EPH, Metals
6/26/2015	COMP-8910-Native	Soil	Composite	N/A	Composite of native soil from borings B-8, B-9, and B-10	EPH, Metals
6/26/2015	COMP-910-Fill	Soil	Composite	N/A	Composite of Historic Fill soil from borings B-9 and B-10	EPH, Metals
8/29/2016	MW-201	GW	Grab	16	Groundwater sample collected -initial monitoring	EPH, VPH
8/29/2016	MW-205	GW	Grab	15	Groundwater sample collected -initial monitoring	EPH, VPH
8/29/2016	MW-202	GW	Grab	13	Groundwater sample collected -initial monitoring	EPH, VPH
8/30/2015	MW-203	GW	Grab	13	Groundwater sample collected -initial monitoring	EPH, VPH
8/30/2015	MW-204	GW	Grab	17	Groundwater sample collected -initial monitoring	EPH, VPH
12/22/2015	TP-1	Soil	Composite	5-7	Evaluate soil conditions immediately below proposed infiltration basin	EPH, Metals
12/22/2015	TP-1	Soil	Composite	7-9	Evaluate soil conditions immediately below proposed infiltration basin	EPH, Metals
12/21/2015	TP-2	Soil	Composite	5-7	Evaluate soil conditions immediately below proposed infiltration basin	EPH, Metals
12/21/2015	TP-2	Soil	Composite	7-9	Evaluate soil conditions immediately below proposed infiltration basin	EPH, Metals
12/21/2015	TP-3	Soil	Composite	5-7	Evaluate soil conditions immediately below proposed infiltration basin	EPH, Metals
12/21/2015	TP-3	Soil	Composite	7-9	Evaluate soil conditions immediately below proposed infiltration basin	EPH, Metals
4/12/2016	B105	Soil	Grab	14-17	Sample collected based on odors/stainining near water table	EPH, VPH
10/12/2016	B-310-12.5	Soil	Grab	12-12.5	Soil collected to define clean bound West of B-105 & MW-201 area	EPH, VPH
10/13/2016	B-314-12.5	Soil	Grab	12 -12.5	Soil collected to define clean bound East/southeast of B-105 & MW-201 area	EPH, VPH
10/13/2016	B-308-12.0	Soil	Grab	11.5 -12	Soil collected to define clean bound North of B-105 & MW-201 area	EPH, VPH
10/13/2016	B-315-12.5	Soil	Grab	12-12.5	Soil collected to define clean bound East/northeast of B-105 & MW-201 area	EPH, VPH
10/13/2016	B-317-11.5	Soil	Grab	11-11.5	Soil collected to demostrate conditions above the water table near Disposal Site perimeter to the southeast	EPH, VPH
10/14/2016	B-317-12.5	Soil	Grab	12-12,5	Soil collected to demostrate impacted conditions within top of the water table near Disposal Site perimeter to the southeast	EPH, VPH
11/1/2016	MW-202	GW	Grab	13	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
11/1/2016	MW-203	GW	Grab	13	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
11/1/2016	MW-204	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
11/1/2016	MW-205	GW	Grab	15	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
11/1/2016	MW-206	GW	Grab	14.2	Groundwater sample colected to evaluate groundwater quality - new well at west perimeter -routine monitoring	EPH, VPH
12/12/2016	B-409	Soil	Grab	10	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-409	Soil	Grab	11.5	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-410	Soil	Grab	11	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-410	Soil	Grab	12.5	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-410	Soil	Grab	14	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-411	Soil	Grab	11.5	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-411	LNAPL	Grab	14	Sample to characterize LNAPL	EPH
12/12/2016	B-411	Soil	Grab	16	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-412	LNAPL	Grab	11.5	Sample to characterize LNAPL	EPH
12/12/2016	B-412	LNAPL	Grab	13	Sample to characterize LNAPL	EPH

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Summary of Environmental Samples
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Sample Date	Sample Name	Matrix	Composite/ Grab	Sample Depth (ft-bgs)	Additional Description	Parameters
12/12/2016	B-412	Soil	Grab	19	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-413	Soil	Grab	11	Soil collected to evaluate extent of contamination	EPH
12/12/2016	B-413	LNAPL	Grab	14-15	Sample to characterize LNAPL	EPH
12/12/2016	B-413	Soil	Grab	23	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-408	Soil	Grab	11	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-408	Soil	Grab	15	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-414	Soil	Grab	11	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-414	LNAPL	Grab	14	Sample to characterize LNAPL	EPH
12/13/2016	B-414	Soil	Grab	15.5	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-416	Soil	Grab	11	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-416	Soil	Grab	15	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-417	Soil	Grab	11	Soil collected to evaluate extent of contamination	EPH
12/13/2016	B-417	Soil	Grab	15	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-451	Soil	Grab	13.4	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-400	Soil	Grab	11.4	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-400	Soil	Grab	12.4	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-401	Soil	Grab	11.5	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-401	Soil	Grab	12.2	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-402	Soil	Grab	11.6	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-402	Soil	Grab	12.2	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-402	Soil	Grab	12.8	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-403	Soil	Grab	10	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-403	Soil	Grab	12	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-404	Soil	Grab	11.4	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-404	LNAPL	Grab	12	Sample to characterize LNAPL	EPH
12/14/2016	B-404	Soil	Grab	16.5	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-405	Soil	Grab	11.5	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-405	Soil	Grab	12.5	Soil collected to evaluate extent of contamination	EPH
12/14/2016	B-406	LNAPL	Grab	11.8	Sample to characterize LNAPL	EPH
12/14/2016	B-406	LNAPL	Grab	12.5	Sample to characterize LNAPL	EPH
12/14/2016	B-406	Soil	Grab	21	Soil collected to evaluate extent of contamination	EPH
12/15/2016	B-407	LNAPL	Grab	11.8	Sample to characterize LNAPL	EPH
12/15/2016	B-407	Soil	Grab	12.8	Soil collected to evaluate extent of contamination	EPH
12/15/2016	B-407	Soil	Grab	17.5	Soil collected to evaluate extent of contamination	EPH
1/3/2017	MW-203	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/3/2017	MW-205	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/3/2017	MW-400	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/3/2017	MW-401	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/3/2017	MW-416	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/3/2017	MW-417	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-202	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-204	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-206	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-403	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-405	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-409	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/4/2017	MW-411	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-402	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-404	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-406	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	DUP-2	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-407	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH

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Sample Date	Sample Name	Matrix	Composite/ Grab	Sample Depth (ft-bgs)	Additional Description	Parameters
1/5/2017	MW-408	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-412	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	DUP-1	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-413	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/5/2017	MW-415	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/6/2017	MW-201	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/6/2017	MW-410	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
1/6/2017	MW-414	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-401	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-205	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-203	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-204	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-402	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-400	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/20/2017	MW-202	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	MW-406	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	DUP-1	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	MW-410	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	MW-201	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	MW-407	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	MW-414	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/21/2017	MW-418	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/22/2017	MW-411	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/22/2017	MW-409	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/22/2017	MW-413	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/22/2017	MW-412	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/22/2017	MW-206	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/22/2017	MW-403	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/23/2017	MW-417	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/23/2017	DUP-2	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/23/2017	MW-404	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/23/2017	MW-405	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/23/2017	MW-416	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
3/23/2017	MW-415	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-202	GW	Grab	15	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-203	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW204	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-205	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	DUP-1	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-400	GW	Grab	15	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-401	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-402	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/5/2017	MW-403	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-206	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-404	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-405	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-408	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-409	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-412	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-413	GW	Grab	16	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/6/2017	MW-415	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-201	GW	Grab	19	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH

Table 2
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Sample Date	Sample Name	Matrix	Composite/ Grab	Sample Depth (ft-bgs)	Additional Description	Parameters
6/7/2017	MW-406	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	DUP-2	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-407	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-410	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-411	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-414	GW	Grab	18	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-416	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH
6/7/2017	MW-417	GW	Grab	17	Groundwater sample collected to evaluate groundwater quality - routine monitoring	EPH, VPH

Abbreviations:
EPH - Extractable Petroleum Hydrocarbons
ft-bgs - feet below ground surface
GW - Groundwater
VPH - Volatile Petroleum Hydrocarbons

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B105	B/MW 201			B/MW 202		B/MW 203	
		Sample Depth (ft.):		0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	14-17	6-8	10-12	10-12	5-7	9-11	5-7	9-11
		Sample Date:		6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	4/12/2016	5/12/2016	5/12/2016	5/10/2016 Field Dup	5/11/2016	5/11/2016	5/11/2016	5/12/2016
		S-2/GW-3	UCLs																		
VPH																					
(mg/kg)	C9-C10 Aromatics	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**45**	NA	NA	NA	NA	NA	NA	NA
	C5-C8 Aliphatics	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.5 U	NA	NA	NA	NA	NA	NA	NA
	C9-C12 Aliphatics	3,000	20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.5 U	NA	NA	NA	NA	NA	NA	NA
	Benzene	200	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA	NA	NA	NA
	Toluene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA	NA	NA	NA
	p/m-xylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA	NA	NA	NA
	o-xylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA	NA	NA	NA
	Xylenes (total)	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA	NA	NA	NA
	Methyl tert butyl ether (MTBE)	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.251 U	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA	NA	NA	NA
EPH																					
(mg/kg)	C9-C18 Aliphatics	3,000	20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4,570**	**11.4**	**677**	**818**	7.7 U	7.01 U	7.29 U	7.72 U
	C19-C36 Aliphatics	5,000	20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9,110**	**73**	**3,260**	**4,310**	**13.3**	7.01 U	**50.1**	**12.3**
	C11-C22 Aromatics	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9,070**	**32.8**	**2,330**	**3,420**	**25.4**	7.01 U	**27.8**	**18.2**
	Naphthalene	1000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	2-Methylnaphthalene	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Acenaphthylene	10	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Acenaphthene	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Fluorene	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Phenanthrene	1000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**0.385**	0.794 U	1.22 U	**0.542**	0.35 U	0.364 U	**0.662**
	Anthracene	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**0.592**	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Fluoranthene	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**1.58**	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Pyrene	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**1.29**	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	**0.431**
	Benzo(a)anthracene	40	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**0.46**	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Chrysene	400	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**0.735**	0.794 U	1.22 U	**0.416**	0.35 U	0.364 U	**0.442**
	Benzo(b)fluoranthene	40	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	**0.358**	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Benzo(k)fluoranthene	400	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Benzo(a)pyrene	7	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Indeno(1,2,3-cd)pyrene	40	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Dibenz(a,h)anthracene	4.0	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
	Benzo(g,h,i)perylene	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41 U	0.35 U	0.794 U	1.22 U	0.385 U	0.35 U	0.364 U	0.386 U
Herbicides																					
(mg/kg)	2,4-D	NS	NS	0.028 U	0.028 U	0.03 U	0.029 U	0.028 U	0.031 U	0.029 U	0.028 U	0.029 U	0.029 U	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-DB	NS	NS	0.028 U	0.028 U	0.03 U	0.029 U	0.028 U	0.031 U	0.029 U	0.028 U	0.029 U	0.029 U	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-TP (Silvex)	NS	NS	0.0028 U	0.0028 U	0.003 U	0.0029 U	0.0028 U	0.0031 U	0.0029 U	0.0028 U	0.003 U	0.0029 U	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-T	NS	NS	0.0028 U	0.0028 U	0.003 U	0.0029 U	0.0028 U	0.0031 U	0.0029 U	0.0028 U	0.003 U	0.0029 U	NA	NA	NA	NA	NA	NA	NA	NA
	Dalapon	NS	NS	0.069 U	0.07 U	0.075 U	0.073 U	0.07 U	0.078 U	0.072 U	0.069 U	0.073 U	0.073 U	NA	NA	NA	NA	NA	NA	NA	NA
	Dicamba	NS	NS	0.0028 U	0.0028 U	0.003 U	0.0029 U	0.0028 U	0.0031 U	0.0029 U	0.0028 U	0.003 U	0.0029 U	NA	NA	NA	NA	NA	NA	NA	NA
	Dichloroprop	NS	NS	0.028 U	0.028 U	0.03 U	0.029 U	0.028 U	0.031 U	0.029 U	0.028 U	0.029 U	0.029 U	NA	NA	NA	NA	NA	NA	NA	NA
	Dinoseb	NS	NS	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.014 U	0.015 U	0.015 U	NA	NA	NA	NA	NA	NA	NA	NA
	MCPA	NS	NS	2.8 U	2.8 U	3.0 U	2.9 U	2.8 U	3.1 U	2.9 U	2.8 U	2.9 U	2.9 U	NA	NA	NA	NA	NA	NA	NA	NA
	MCPP	NS	NS	2.8 U	2.8 U	3.0 U	2.9 U	2.8 U	3.1 U	2.9 U	2.8 U	2.9 U	2.9 U	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																					
(mg/kg)	Antimony	30	300	**6.9**	**6.6**	**8.0**	**7.5**	**7.3**	**8.3**	**7.1**	**7.4**	**6.8**	**7.8**	NA	2.2 U	2.3 U	2.5 U	2.3 U	2.2 U	2.2 U	2.3 U
	Arsenic	20	500	**17**	**31**	**47**	**48**	**30**	**90**	**34**	**36**	**55**	**48**	NA	**24**	**16**	**20**	**4.4**	**2.5**	**46**	**19**
	Barium	3,000	10,000	**49**	**76**	**99**	**98**	**70**	**110**	**79**	**77**	**120**	**110**	NA	**34**	**11**	**29**	**20**	**6.5**	**39**	**20**
	Beryllium	200	2,000	**1.0**	**2.0**	**2.5**	**2.5**	**1.9**	**3.4**	**2.0**	**1.9**	**2.7**	**2.5**	NA	**0.74**	**0.55**	**0.78**	**0.27**	**0.23**	**0.6**	**1.3**
	Cadmium	100	1,000	**0.73**	**1.2**	**1.7**	**1.7**	**1.1**	**2.9**	**1.3**	**1.3**	**1.8**	**1.7**	NA	0.44 U	0.47 U	0.5 U	0.46 U	0.43 U	0.44 U	0.46 U
	Chromium	200	2,000	**12**	**14**	**17**	**17**	**15**	**20**	**14**	**16**	**17**	**17**	NA	**9.6**	**3.9**	**7.1**	**11**	**6.8**	**12**	**8**
	Lead	600	6,000	**31**	**35**	**37**	**32**	**23**	**29**	**29**	**28**	**27**	**29**	NA	**33**	**9.9**	**14**	**14**	**2.3**	**4.4**	**16**
	Mercury	30	300	**0.061**	**0.17**	**0.17**	**0.13**	**0.084**	**0.14**	**0.11**	**0.081**	**0.10**	**0.10**	NA	**0.191**	0.096 U	0.103 U	0.081 U	0.077 U	**0.252**	0.082 U
	Nickel	1000	10,000	**11**	**20**	**23**	**24**	**20**	**32**	**19**	**20**	**21**	**25**	NA	**11**	**13**	**11**	**9.8**	**8.3**	**16**	**17**
	Selenium	700	7,000	5.5 U	5.6 U	6.0 U	5.8 U	5.6 U	6.3 U	5.8 U	5.5 U	5.8 U	5.8 U	NA	2.2 U	2.3 U	2.5 U	2.3 U	2.2 U	2.2 U	2.3 U
	Silver	200	2,000	0.55 U	0.56 U	0.60 U	0.58 U	0.56 U	0.63 U	0.58 U	0.55 U	0.58 U	0.58 U	NA	0.44 U	0.47 U	0.5 U	0.46 U	0.43 U	0.44 U	0.46 U
	Thallium	60	800	2.8 U	2.8 U	3.0 U	2.9 U	2.8 U	3.1 U	2.9 U	2.8 U	2.9 U	2.9 U	NA	2.2 U	2.3 U	2.5 U	2.3 U	2.2 U	2.2 U	2.3 U
	Vanadium	700	7,000	**48**	**100**	**110**	**120**	**98**	**86**	**89**	**84**	**89**	**99**	NA	**24**	**12**	**16**	**20**	**12**	**24**	**21**
	Zinc	3,000	10,000	**34**	**43**	**54**	**50**	**45**	**35**	**45**	**49**	**47**	**51**	NA	**110**	**6.6**	**15**	**46**	**29**	**13**	**15**

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		B/MW 204		B/MW 205		B-308	B-310	B-314	B-315	B-317		COMP-123	COMP-467	COMP-8910	COMP-123-Fill	COMP-123-Native	COMP-467-Fill	COMP-467-Native	COMP-8910-Native	COMP-910-Fill	TP-1		
		Sample Depth (ft.):		6-8	8-10	6-8	10-12	12.0	12.5	12.5	12.5	11.5	13.0	0-1	0-1	0-1	N/A	N/A	N/A	N/A	N/A	N/A	5-7	5-7	7-9
		Sample Date:		5/10/2016	5/10/2016	5/12/2016	5/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	6/10/2015	6/10/2015	6/10/2015	6/26/2015	6/26/2015	6/26/2015	6/26/2015	6/26/2015	6/26/2015	12/22/2015	12/22/2015 Field Dup	12/22/2015
		S-2/GW-3	UCLs																						
VPH																									
(mg/kg)	C9-C10 Aromatics	500	5,000	NA	NA	NA	NA	3.1 U	5.59 U	2.54 U	5.57 U	17 U	**140**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C5-C8 Aliphatics	500	5,000	NA	NA	NA	NA	3.1 U	5.59 U	2.54 U	5.57 U	17 U	12.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C12 Aliphatics	3,000	20,000	NA	NA	NA	NA	3.1 U	5.59 U	2.54 U	5.57 U	17 U	**163**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	200	10,000	NA	NA	NA	NA	0.124 U	0.224 U	0.102 U	0.223 U	0.679 U	0.498 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	1,000	10,000	NA	NA	NA	NA	0.124 U	0.224 U	0.102 U	0.223 U	0.679 U	0.498 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	1,000	10,000	NA	NA	NA	NA	0.124 U	0.224 U	0.102 U	0.223 U	0.679 U	0.498 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p/m-xylene	NS	NS	NA	NA	NA	NA	0.124 U	0.224 U	0.102 U	0.223 U	0.679 U	0.498 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-xylene	NS	NS	NA	NA	NA	NA	0.124 U	0.224 U	0.102 U	0.223 U	0.679 U	0.498 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes (total)	1,000	10,000	NA	NA	NA	NA	0.124 U	0.224 U	0.102 U	0.223 U	0.679 U	0.498 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Methyl tert butyl ether (MTBE)	500	5,000	NA	NA	NA	NA	0.062 U	0.112 U	0.051 U	0.111 U	0.339 U	0.249 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	1,000	10,000	NA	NA	NA	NA	0.248 U	0.447 U	0.204 U	0.446 U	1.36 U	0.995 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	3,000	20,000	**7.97**	9.11 U	6.5 U	9.55 U	7.34 U	**11.2**	7.01 U	9.36 U	11 U	**3,740**	NA	NA	NA	**13**	NA	13 U	NA	NA	14 U	NA	NA	NA
	C19-C36 Aliphatics	5,000	20,000	**51.7**	9.11 U	**8.44**	**10.1**	7.34 U	**132**	7.01 U	9.36 U	11 U	**6,140**	NA	NA	NA	12 U	NA	13 U	NA	NA	14 U	NA	NA	NA
	C11-C22 Aromatics	3,000	10,000	**33.5**	9.11 U	6.5 U	9.55 U	7.34 U	**97**	7.01 U	9.36 U	11 U	**5,970**	NA	NA	NA	**26**	NA	**22**	NA	NA	14 U	NA	NA	NA
	Naphthalene	1000	10,000	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	0.18 U
	2-Methylnaphthalene	500	5,000	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	**0.21**	NA	**0.16**	NA	NA	0.14 U	0.18 U	**0.22**	**0.23**
	Acenaphthylene	10	10,000	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	0.18 U
	Acenaphthene	3,000	10,000	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	0.18 U
	Fluorene	3,000	10,000	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	0.18 U
	Phenanthrene	1000	10,000	**2.03**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	**0.61**	NA	**0.34**	NA	NA	**0.18**	**0.47**	**1.2**	**0.91**
	Anthracene	3,000	10,000	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	0.18 U
	Fluoranthene	3,000	10,000	**2.57**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	**0.33**	**0.90**	**0.56**
	Pyrene	3,000	10,000	**2.89**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	**0.29**	NA	0.13 U	NA	NA	0.14 U	**0.50**	**1.3**	**0.89**
	Benzo(a)anthracene	40	3,000	**1.34**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	**0.13**	NA	0.13 U	NA	NA	0.14 U	**0.25**	**0.65**	**0.46**
	Chrysene	400	10,000	**1.5**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	**0.28**	NA	0.13 U	NA	NA	0.14 U	**0.31**	**0.80**	**0.62**
	Benzo(b)fluoranthene	40	3,000	**0.986**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	**0.13**	NA	0.13 U	NA	NA	0.14 U	**0.24**	**0.61**	**0.49**
	Benzo(k)fluoranthene	400	10,000	**0.908**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	**0.20**	0.18 U
	Benzo(a)pyrene	7	300	**1.02**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	**0.20**	**0.46**	**0.37**
	Indeno(1,2,3-cd)pyrene	40	3,000	**0.694**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	**0.20**	0.18 U
	Dibenz(a,h)anthracene	4.0	300	0.362 U	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	0.18 U
	Benzo(g,h,i)perylene	3,000	10,000	**0.71**	0.456 U	0.325 U	0.478 U	0.367 U	0.497 U	0.35 U	0.468 U	0.551 U	3.86 U	NA	NA	NA	0.12 U	NA	0.13 U	NA	NA	0.14 U	0.18 U	0.18 U	**0.19**
Herbicides																									
(mg/kg)	2,4-D	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.026 U	0.027 U	0.027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-DB	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.026 U	0.027 U	0.027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-TP (Silvex)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0026 U	0.0027 U	0.0027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-T	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0026 U	0.0027 U	0.0027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dalapon	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.065 U	0.068 U	0.066 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dicamba	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0026 U	0.0027 U	0.0027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dichloroprop	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.026 U	0.027 U	0.027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dinoseb	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.013 U	0.014 U	0.013 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MCPA	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6 U	2.7 U	2.7 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MCPP	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6 U	2.7 U	2.7 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	30	300	2.1 U	**3.8**	2 U	**4.2**	NA	NA	NA	NA	NA	NA	2.6 U	2.7 U	2.6 U	**5.5**	**15**	**6.2**	**16**	**16**	**7.1**	2.7 U	2.7 U	2.7 U
	Arsenic	20	500	**30**	**90**	**3.4**	**130**	NA	NA	NA	NA	NA	NA	**29**	**44**	**39**	**23**	**13**	**43**	**12**	**13**	**80**	**7.7**	**7.0**	**9.8**
	Barium	3,000	10,000	**51**	**94**	**4.5**	**81**	NA	NA	NA	NA	NA	NA	**71**	**94**	**85**	**46**	**60**	**48**	**77**	**59**	**130**	**23**	**23**	**30**
	Beryllium	200	2,000	**0.66**	**2.6**	0.2 U	**4.2**	NA	NA	NA	NA	NA	NA	**1.4**	**1.9**	**1.8**	**1.2**	**1.1**	**2.8**	**1.2**	**1.3**	**4.9**	**0.84**	**0.73**	**0.93**
	Cadmium	100	1,000	0.42 U	0.55 U	0.4 U	0.58 U	NA	NA	NA	NA	NA	NA	**1.0**	**1.5**	**1.3**	**0.89**	**0.90**	**1.5**	**0.82**	**0.92**	**2.6**	**0.66**	**0.57**	**0.72**
	Chromium	200	2,000	**15**	**24**	**2.5**	**19**	NA	NA	NA	NA	NA	NA	**15**	**17**	**18**	**13**	**34**	**15**	**34**	**35**	**28**	**12**	**11**	**13**
	Lead	600	6,000	**32**	**16**	**2.1**	**10**	NA	NA	NA	NA	NA	NA	**23**	**30**	**27**	**13**	**34**	**12**	**11**	**17**	**23**	**10**	**9.6**	**15**
	Mercury	30	300	**0.218**	**0.142**	0.068 U	**0.285**	NA	NA	NA	NA	NA	NA	**0.11**	**0.11**	**0.16**	**0.052**	**0.16**	**0.047**	0.034 U	**0.047**	**0.095**	**0.031**	**0.033**	**0.033**
	Nickel	1000	10,000	**19**	**15**	**1.4**	**17**	NA	NA	NA	NA	NA	NA	**17**	**27**	**25**	**13**	**24**	**38**	**24**	**25**	**27**	**12**	**10**	**14**
	Selenium	700	7,000	2.1 U	2.7 U	2 U	2.9 U	NA	NA	NA	NA	NA	NA	**5.9**	5.3 U	**5.4**	5.9 U	6.4 U	6.5 U	6.8 U	6.7 U	6.9 U	5.3 U	5.4 U	5.4 U
	Silver	200	2,000	0.42 U	0.55 U	0.4 U	0.58 U	NA	NA	NA	NA	NA	NA	0.52 U	0.53 U	0.52 U	0.59 U	0.64 U	0.65 U	0.68 U	0.67 U	0.69 U	0.53 U	0.54 U	0.54 U
	Thallium	60	800	2.1 U	2.7 U	2 U	2.9 U	NA	NA	NA	NA	NA	NA	**3.6**	**3.6**	**3.3**	2.9 U	3.2 U	3.2 U	3.4 U	3.4 U	3.5 U	2.7 U	2.7 U	2.7 U
	Vanadium	700	7,000	**82**	**71**	**8**	**75**	NA	NA	NA	NA	NA	NA	**90**	**100**	**95**	**33**	**46**	**40**	**51**	**54**	**86**	**33**	**31**	**39**
	Zinc	3,000	10,000	**62**	**17**	**6.5**	**19**	NA	NA	NA	NA	NA	NA	**46**	**49**	**51**	**17**	**90**	**34**	**63**	**69**	**33**	**36**	**32**	**38**

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		TP-2		TP-3		B-400		B-401		B-402			B-403		B-404		B-405		B-406	B-407		B-408	
		Sample Depth (ft.):		5-7	7-9	5-7^	7-9	11.4	12.4	11.5	12.2	11.6	12.2	12.8	10	12	11.4	16.5	11.5	12.5	21	12.8	17.5	11	15
		Sample Date:		12/21/2015	12/21/2015	12/21/2015	12/21/2015	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/15/2016	12/15/2016	12/13/2016	12/13/2016
		S-2/GW-3	UCLs																						
VPH																									
(mg/kg)	C9-C10 Aromatics	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C5-C8 Aliphatics	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C12 Aliphatics	3,000	20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	200	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p/m-xylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-xylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes (total)	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Methyl tert butyl ether (MTBE)	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	3,000	20,000	NA	NA	NA	NA	8.1 U	9.26 U	11.1 U	7.76 U	7.18 U	**353**	8.49 U	6.92 U	7.29 U	**165**	7.55 U	12.7 U	7.65 U	7.14 U	**3,300**	7.36 U	8.16 U	6.81 U
	C19-C36 Aliphatics	5,000	20,000	NA	NA	NA	NA	8.1 U	9.26 U	11.1 U	7.76 U	7.18 U	**693**	8.49 U	6.92 U	7.29 U	**278**	7.55 U	12.7 U	7.65 U	7.14 U	**5,650**	7.36 U	**8.22**	6.81 U
	C11-C22 Aromatics	3,000	10,000	NA	NA	NA	NA	**11**	**15**	11.1 U	7.76 U	7.18 U	**776**	**9.61**	6.92 U	7.29 U	**704**	**9.87**	**49.7**	7.65 U	7.14 U	**6,670**	7.36 U	**30.1**	6.81 U
	Naphthalene	1000	10,000	0.19 U	**0.21**	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	**11.8**	0.368 U	0.408 U	0.341 U
	2-Methylnaphthalene	500	5,000	**0.37**	**0.50**	NA	**0.28**	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	**0.675**	0.383 U	0.357 U	**45.2**	0.368 U	0.408 U	0.341 U
	Acenaphthylene	10	10,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Acenaphthene	3,000	10,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	**0.692**	0.341 U
	Fluorene	3,000	10,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Phenanthrene	1000	10,000	**1.0**	**1.3**	NA	**0.69**	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	**1.61**	0.377 U	**1.99**	0.383 U	0.357 U	**8.97**	0.368 U	**0.438**	0.341 U
	Anthracene	3,000	10,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Fluoranthene	3,000	10,000	0.19 U	**0.24**	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	**1.13**	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Pyrene	3,000	10,000	**0.59**	**0.68**	NA	**0.24**	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	**1.08**	0.377 U	**1.67**	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Benzo(a)anthracene	40	3,000	**0.27**	**0.31**	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	**0.943**	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Chrysene	400	10,000	**0.54**	**0.71**	NA	**0.36**	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	**1.19**	0.377 U	**1.42**	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Benzo(b)fluoranthene	40	3,000	0.19 U	**0.25**	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	**0.655**	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Benzo(k)fluoranthene	400	10,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Benzo(a)pyrene	7	300	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	**0.799**	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Indeno(1,2,3-cd)pyrene	40	3,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
	Dibenz(a,h)anthracene	4.0	300	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	**0.742**	0.341 U
	Benzo(g,h,i)perylene	3,000	10,000	0.19 U	0.20 U	NA	0.21 U	0.405 U	0.463 U	0.557 U	0.388 U	0.359 U	0.708 U	0.424 U	0.346 U	0.364 U	0.404 U	0.377 U	0.636 U	0.383 U	0.357 U	3.63 U	0.368 U	0.408 U	0.341 U
Herbicides																									
(mg/kg)	2,4-D	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-DB	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-TP (Silvex)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-T	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dalapon	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dicamba	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dichloroprop	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dinoseb	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MCPA	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MCPP	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	30	300	2.8 U	3.0 U	2.5 U	3.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	500	**31**	**54**	**46**	**45**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	3,000	10,000	**41**	**75**	**39**	**31**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	200	2,000	**1.1**	**2.7**	**1.7**	**2.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	100	1,000	**1.3**	**1.9**	**1.6**	**1.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	200	2,000	**14**	**9.6**	**8.9**	**32**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	600	6,000	**15**	**34**	**13**	**20**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	30	300	0.027 U	**0.049**	**0.15**	**0.14**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	1000	10,000	**14**	**15**	**16**	**21**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	700	7,000	5.6 U	6.0 U	5.0 U	6.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	200	2,000	0.56 U	0.60 U	0.50 U	0.62 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	60	800	2.8 U	3.0 U	2.5 U	3.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	700	7,000	**29**	**39**	**24**	**20**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	3,000	10,000	**30**	**16**	**14**	**20**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		B-409		B-410			B-411		B-412	B-413		B-414		B-415				B-416		B-417	
		Sample Depth (ft.):		10	11.5	11	12.5	14	11.5	16	19	11	23	11	15.5	11.8	12.2	13.4	13.4	11	15	11	15
		Sample Date:		12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/13/2016	12/13/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016 Field Dup	12/13/2016	12/13/2016	12/13/2016	12/13/2016
		S-2/GW-3	UCLs																				
VPH																							
(mg/kg)	C9-C10 Aromatics	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C5-C8 Aliphatics	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C12 Aliphatics	3,000	20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	200	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p/m-xylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-xylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes (total)	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Methyl tert butyl ether (MTBE)	500	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	1,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																							
(mg/kg)	C9-C18 Aliphatics	3,000	20,000	8.13 U	9.05 U	**697**	**3,690**	**21.5**	**12.6**	9.43 U	8.27 U	**1,780**	8.22 U	**52.7**	**108**	**3,250**	**2,680**	**1,060**	**510**	6.96 U	8.14 U	**6.94**	7.31 U
	C19-C36 Aliphatics	5,000	20,000	8.13 U	9.05 U	**2,740**	**5,810**	**32**	**98.4**	9.43 U	**21.4**	**4,590**	**13.6**	**256**	**175**	**6,670**	**5,500**	**1,740**	**712**	**95.4**	8.14 U	**53.8**	7.31 U
	C11-C22 Aromatics	3,000	10,000	**37.4**	**10.3**	**7,670**	**7,170**	**18.5**	**246**	9.43 U	**36.5**	**6,610**	**21**	**192**	**256**	**8,790**	**5,710**	**1,890**	**866**	**114**	8.14 U	**90.9**	7.31 U
	Naphthalene	1000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	2-Methylnaphthalene	500	5,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	**0.675**	0.348 U	0.407 U	0.344 U	0.365 U
	Acenaphthylene	10	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Acenaphthene	3,000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Fluorene	3,000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Phenanthrene	1000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	**0.4**	0.407 U	**0.654**	0.365 U
	Anthracene	3,000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Fluoranthene	3,000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	**0.454**	0.407 U	**0.674**	0.365 U
	Pyrene	3,000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	**0.486**	0.407 U	**0.763**	0.365 U
	Benzo(a)anthracene	40	3,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	**0.67**	0.348 U	0.407 U	**0.458**	0.365 U
	Chrysene	400	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	**0.781**	**0.409**	0.407 U	**0.627**	0.365 U
	Benzo(b)fluoranthene	40	3,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	**0.385**	0.365 U
	Benzo(k)fluoranthene	400	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Benzo(a)pyrene	7	300	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	**0.39**	0.365 U
	Indeno(1,2,3-cd)pyrene	40	3,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Dibenz(a,h)anthracene	4.0	300	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	0.344 U	0.365 U
	Benzo(g,h,i)perylene	3,000	10,000	0.406 U	0.452 U	3.99 U	8.16 U	0.413 U	0.35 U	0.472 U	0.414 U	12.2 U	0.411 U	0.367 U	0.379 U	8.08 U	13.1 U	2.3 U	0.434 U	0.348 U	0.407 U	**0.396**	0.365 U
Herbicides																							
(mg/kg)	2,4-D	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-DB	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-TP (Silvex)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4,5-T	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dalapon	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dicamba	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dichloroprop	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dinoseb	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MCPA	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MCPP	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																							
(mg/kg)	Antimony	30	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	200	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	200	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	600	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	30	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	1000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	700	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	200	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	60	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	700	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	3,000	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B105	B/MW 201			B/MW 202		B/MW 203	
		Sample Depth (ft.):		0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	14-17	6-8	10-12	10-12	5-7	9-11	5-7	9-11
		Sample Date:		6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	6/25/2015	4/12/2016	5/12/2016	5/12/2016	5/10/2016 Field Dup	5/11/2016	5/11/2016	5/11/2016	5/12/2016
		S-2/GW-3	UCLs																		
Metals, SPLP																					
(mg/L)	Antimony	N/A	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
	Arsenic	5*	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0050 U	**0.005**	0.0050 U	**0.009**	0.0050 U
	Barium	100	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	**0.014**	0.010 U	**0.013**	**0.013**
	Beryllium	N/A	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
	Cadmium	1*	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
	Chromium	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
	Lead	5*	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
	Mercury	0.2*	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
	Nickel	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	Selenium	1*	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
	Silver	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U
	Thallium	N/A	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	Vanadium	N/A	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
	Zinc	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
General Chemistry																					
(umhos/cm)	Specific conductance	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
(s.u.)	pH	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Calculated Total Petroleum Hydrocarbons			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**22,795**	**123**	**6,267**	**8,548**	**39.7**	ND	**77.9**	**32.0**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm) unless otherwise noted.
mg/L - milligrams per liter.
s.u. - Standard unit.
umhos/cm - Micro-mhos per centimeter.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
NS - No MassDEP standards exist for this analyte.
U - Analyte was not detected at specified quantitation limit.
Values in **bold** indicate the analyte was detected.
Values shown in bold and shaded type exceed one or more of the listed MassDEP
EPH - Extractable Petroleum Hydrocarbons.
VPH - Volatile Petroleum Hydrocarbons
SPLP - Synthetic Precipitation Leaching Procedure.
UCLs - Upper concentration limits.
* - EPA SW-846 Chapter 7, Table 7-1, Maximum Concentration of Contaminants for Toxicity Characteristic.
^ - Sample reported on a wet weight basis.

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		B/MW 204		B/MW 205		B-308	B-310	B-314	B-315	B-317		COMP-123	COMP-467	COMP-8910	COMP-123-Fill	COMP-123-Native	COMP-467-Fill	COMP-467-Native	COMP-8910-Native	COMP-910-Fill	TP-1		
		Sample Depth (ft.):		6-8	8-10	6-8	10-12	12.0	12.5	12.5	12.5	11.5	13.0	0-1	0-1	0-1	N/A	N/A	N/A	N/A	N/A	N/A	5-7	5-7	7-9
		Sample Date:		5/10/2016	5/10/2016	5/12/2016	5/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	6/10/2015	6/10/2015	6/10/2015	6/26/2015	6/26/2015	6/26/2015	6/26/2015	6/26/2015	6/26/2015	12/22/2015	12/22/2015 Field Dup	12/22/2015
		S-2/GW-3	UCLs																						
Metals, SPLP																									
(mg/L)	Antimony	N/A	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	5*	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	100	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	N/A	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1*	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	5*	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	0.2*	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	1*	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	N/A	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	N/A	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																									
(umhos/cm)	Specific conductance	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**160**	NA	**140**	**160**	NA	NA	NA	NA
(s.u.)	pH	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.9**	**8.0**	**7.5**
	Calculated Total Petroleum Hydrocarbons			**108**	ND	**8.44**	**10.1**	ND	**240**	ND	ND	ND	**16,153**												

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm) unless otherwise noted.
mg/L - milligrams per liter.
s.u. - Standard unit.
umhos/cm - Micro-mhos per centimeter.
NA - Sample not analyzed for the listed analyte.
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EPH - Extractable Petroleum Hydrocarbons.
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SPLP - Synthetic Precipitation Leaching Procedure.
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* - EPA SW-846 Chapter 7, Table 7-1, Maximum Concentration of Contaminants for Toxicity Characteristic
^ - Sample reported on a wet weight basis.

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		TP-2		TP-3		B-400		B-401		B-402			B-403		B-404		B-405		B-406	B-407		B-408	
		Sample Depth (ft.):		5-7	7-9	5-7^	7-9	11.4	12.4	11.5	12.2	11.6	12.2	12.8	10	12	11.4	16.5	11.5	12.5	21	12.8	17.5	11	15
		Sample Date:		12/21/2015	12/21/2015	12/21/2015	12/21/2015	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016	12/15/2016	12/15/2016	12/13/2016	12/13/2016
		S-2/GW-3	UCLs																						
Metals, SPLP																									
(mg/L)	Antimony	N/A	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	5*	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	100	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	N/A	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1*	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	5*	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	0.2*	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	1*	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	N/A	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	N/A	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																									
(umhos/cm)	Specific conductance	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
(s.u.)	pH	N/A	N/A	**5.8**	**6.2**	**7.0**	**6.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Calculated Total Petroleum Hydrocarbons							**11.0**	**15.0**	ND	ND	ND	**1,822**	**9.61**	ND	ND	**1,151**	ND	**59.0**	ND	ND	**15,686**	ND	**40.2**	ND

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm) unless otherwise noted.
mg/L - milligrams per liter.
s.u. - Standard unit.
umhos/cm - Micro-mhos per centimeter.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
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* - EPA SW-846 Chapter 7, Table 7-1, Maximum Concentration of Contaminants for Toxicity Characteristic
^ - Sample reported on a wet weight basis.

Table 3
Soil Analytical Results
Permanent Solution Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Analyte	Sample ID:		B-409		B-410			B-411		B-412	B-413		B-414		B-415				B-416		B-417	
		Sample Depth (ft.):		10	11.5	11	12.5	14	11.5	16	19	11	23	11	15.5	11.8	12.2	13.4	13.4	11	15	11	15
		Sample Date:		12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/13/2016	12/13/2016	12/14/2016	12/14/2016	12/14/2016	12/14/2016 Field Dup	12/13/2016	12/13/2016	12/13/2016	12/13/2016
		S-2/GW-3	UCLs																				
Metals, SPLP																							
(mg/L)	Antimony	N/A	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	5*	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	100	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	N/A	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1*	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	5*	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	0.2*	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	1*	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	5*	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	N/A	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	N/A	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	N/A	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																							
(umhos/cm)	Specific conductance	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
(s.u.)	pH	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Calculated Total Petroleum Hydrocarbons			**37.4**	**10.3**	**11,107**	**16,670**	**72**	**357**	ND	**57.9**	**12,980**	**34.6**	**501**	**539**	**18,710**	**13,890**	**4,690**	**2,090**	**211**	ND	**156**	ND

Notes:
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mg/L - milligrams per liter.
s.u. - Standard unit.
umhos/cm - Micro-mhos per centimeter.
NA - Sample not analyzed for the listed analyte.
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^ - Sample reported on a wet weight basis.

Table 4
Summary of Analytical Results for Groundwater Samples -- 2016 and 2017
IRA Completion Report
Atlantic Bridge
Weymouth, Massachusetts

Analysis	Analyte	Sample Location:		MW-201		MW-201	MW-221	MW-201	MW-201	MW-201	MW-202	MW-202	MW-202	MW-202	MW-202	MW-202
		Sample ID:		MW-201	DUP-1	MW-201	MW-221	MW-201	MW-201	MW-201	MW-202	MW-202	MW-202	MW-202	MW-202	MW-202
		Sample Date:		8/30/2016	8/30/2016	11/3/2016	11/3/2016	1/6/2017	3/21/2017	6/7/2017	8/29/2016	11/1/2016	1/4/2017	3/20/2017	6/5/2017	
		GW-2	GW-3		Field Dup		Field Dup									
VPH																
(ug/L)	C9-C10 Aromatics	4,000	50,000	250 U	250 U	250 U	250 U	250 U	50 U	50 U	250 U	250 U	50 U	50 U	50 U	
	C5-C8 Aliphatics	3,000	50,000	250 U	250 U	250 U	250 U	250 U	50 U	50 U	250 U	250 U	50 U	50 U	50 U	
	C9-C12 Aliphatics	5,000	50,000	250 U	250 U	250 U	250 U	250 U	50 U	50 U	250 U	250 U	50 U	50 U	50 U	
	Benzene	1,000	10,000	10 U	10 U	10 U	10 U	10 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	
	Toluene	50,000	40,000	10 U	10 U	10 U	10 U	10 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	
	Ethylbenzene	20,000	5,000	10 U	10 U	10 U	10 U	10 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	
	p/m-Xylene	NS	NS	10 U	10 U	10 U	10 U	10 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	
	o-Xylene	NS	NS	10 U	10 U	10 U	10 U	10 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	
	Xylenes (total)	3,000	5,000	10 U	10 U	10 U	10 U	10 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	
	Methyl tert butyl ether	50,000	50,000	15 U	15 U	15 U	15 U	15 U	3.0 U	3.0 U	15 U	15 U	3.0 U	3.0 U	3.0 U	
	Naphthalene	700	20,000	20 U	20 U	20 U	20 U	20 U	4.0 U	4.0 U	20 U	20 U	4.0 U	4.0 U	4.0 U	
EPH																
(ug/L)	C9-C18 Aliphatics	5,000	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	
	C19-C36 Aliphatics	NS	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	
	C11-C22 Aromatics	50,000	5,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	
	Naphthalene	700	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	2-Methylnaphthalene	2,000	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Acenaphthylene	10,000	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Acenaphthene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Fluorene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Phenanthrene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Anthracene	NS	30	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Fluoranthene	NS	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Pyrene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Benzo(a)anthracene	NS	1,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Chrysene	NS	70	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Benzo(b)fluoranthene	NS	400	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Benzo(k)fluoranthene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Benzo(a)pyrene	NS	500	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Indeno(1,2,3-cd)Pyrene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Dibenzo(a,h)anthracene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
	Benzo(ghi)perylene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Metals, dissolved																
(ug/L)	Antimony	NS	8,000	50 U	50 U	NA	NA	NA	NA	NA	50 U	NA	NA	NA	NA	
	Arsenic	NS	900	5.0 U	5.0 U	NA	NA	NA	NA	NA	**7.0**	NA	NA	NA	NA	
	Barium	NS	50,000	**71**	**71**	NA	NA	NA	NA	NA	**85**	NA	NA	NA	NA	
	Beryllium	NS	200	5.0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA	
	Cadmium	NS	4	4.0 U	4.0 U	NA	NA	NA	NA	NA	4.0 U	NA	NA	NA	NA	
	Chromium	NS	300	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Lead	NS	10	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Mercury	NS	20	0.20 U	**0.20**	NA	NA	NA	NA	NA	0.20 U	NA	NA	NA	NA	
	Nickel	NS	200	25 U	25 U	NA	NA	NA	NA	NA	25 U	NA	NA	NA	NA	
	Selenium	NS	100	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Silver	NS	7	7.0 U	7.0 U	NA	NA	NA	NA	NA	7.0 U	NA	NA	NA	NA	
	Thallium	NS	3,000	20 U	20 U	NA	NA	NA	NA	NA	20 U	NA	NA	NA	NA	
	Vanadium	NS	4,000	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Zinc	NS	900	**71**	**383**	NA	NA	NA	NA	NA	**60**	NA	NA	NA	NA	
Metals, total																
(ug/L)	Antimony	NS	8,000	50 U	50 U	NA	NA	NA	NA	NA	50 U	NA	NA	NA	NA	
	Arsenic	NS	900	**6.0**	5.0 U	NA	NA	NA	NA	NA	**6.0**	NA	NA	NA	NA	
	Barium	NS	50,000	**74**	**73**	NA	NA	NA	NA	NA	**88**	NA	NA	NA	NA	
	Beryllium	NS	200	5.0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA	
	Cadmium	NS	4	4.0 U	4.0 U	NA	NA	NA	NA	NA	4.0 U	NA	NA	NA	NA	
	Chromium	NS	300	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Lead	NS	10	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Mercury	NS	20	0.20 U	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	NA	NA	NA	
	Nickel	NS	200	25 U	25 U	NA	NA	NA	NA	NA	25 U	NA	NA	NA	NA	
	Selenium	NS	100	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Silver	NS	7	7.0 U	7.0 U	NA	NA	NA	NA	NA	7.0 U	NA	NA	NA	NA	
	Thallium	NS	3,000	20 U	20 U	NA	NA	NA	NA	NA	20 U	NA	NA	NA	NA	
	Vanadium	NS	4,000	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	
	Zinc	NS	900	**333**	**591**	NA	NA	NA	NA	NA	**577**	NA	NA	NA	NA	

Analysis	Analyte	MW-203	MW-203	MW-203	MW-203	MW-203	MW-204	MW-204	MW-204	MW-204	MW-204
		MW-203	MW-203	MW-203	MW-203	MW-203	MW-204	MW-204	MW-204	MW-204	MW-204
		8/29/2016	11/1/2016	1/3/2017	3/20/2017	6/5/2017	8/29/2016	11/1/2016	1/4/2017	3/20/2017	6/5/2017
VPH											
(ug/L)	C9-C10 Aromatics	250 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U
	C5-C8 Aliphatics	250 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U
	C9-C12 Aliphatics	250 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U
	Benzene	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U
	Toluene	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U
	Ethylbenzene	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U
	p/m-Xylene	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U
	o-Xylene	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U
	Xylenes (total)	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U
	Methyl tert butyl ether	15 U	3.0 U	3.0 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U	3.0 U	3.0 U
	Naphthalene	20 U	4.0 U	4.0 U	4.0 U	4.0 U	20 U	4.0 U	4.0 U	4.0 U	4.0 U
EPH											
(ug/L)	C9-C18 Aliphatics	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C19-C36 Aliphatics	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C11-C22 Aromatics	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Indeno(1,2,3-cd)Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(ghi)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Metals, dissolved											
(ug/L)	Antimony	50 U	NA	NA	NA	NA	50 U	NA	NA	NA	NA
	Arsenic	**7.0**	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA
	Barium	**42**	NA	NA	NA	NA	**47**	NA	NA	NA	NA
	Beryllium	5.0 U	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA
	Cadmium	4.0 U	NA	NA	NA	NA	4.0 U	NA	NA	NA	NA
	Chromium	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Lead	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Mercury	0.20 U	NA	NA	NA	NA	0.20 U	NA	NA	NA	NA
	Nickel	25 U	NA	NA	NA	NA	25 U	NA	NA	NA	NA
	Selenium	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Silver	7.0 U	NA	NA	NA	NA	7.0 U	NA	NA	NA	NA
	Thallium	20 U	NA	NA	NA	NA	20 U	NA	NA	NA	NA
	Vanadium	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Zinc	**553**	NA	NA	NA	NA	**608**	NA	NA	NA	NA
Metals, total											
(ug/L)	Antimony	50 U	NA	NA	NA	NA	50 U	NA	NA	NA	NA
	Arsenic	5.0 U	NA	NA	NA	NA	**5.0**	NA	NA	NA	NA
	Barium	**42**	NA	NA	NA	NA	**45**	NA	NA	NA	NA
	Beryllium	5.0 U	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA
	Cadmium	4.0 U	NA	NA	NA	NA	4.0 U	NA	NA	NA	NA
	Chromium	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Lead	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Mercury	0.20 U	NA	NA	NA	NA	0.20 U	NA	NA	NA	NA
	Nickel	25 U	NA	NA	NA	NA	25 U	NA	NA	NA	NA
	Selenium	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Silver	7.0 U	NA	NA	NA	NA	7.0 U	NA	NA	NA	NA
	Thallium	20 U	NA	NA	NA	NA	20 U	NA	NA	NA	NA
	Vanadium	10 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA
	Zinc	**50**	NA	NA	NA	NA	**58**	NA	NA	NA	NA

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
NS - No MassDEP standards exist for this analyte.
U - Analyte was not detected at specified quantitation limit.
Values in **bold** indicate the analyte was detected.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.

Table 4
Summary of Analytical Results for Groundwater Samples -- 2016 and 2017
IRA Completion Report
Atlantic Bridge
Weymouth, Massachusetts

Analysis	Analyte	Sample Location:		MW-205						MW-206				MW-400			MW-401			MW-402			MW-403		
		Sample ID:		MW-205	MW-205	MW-205	MW-205	MW-205	DUP-1	MW-206	MW-206	MW-206	MW-206	MW-400	MW-400	MW-400	MW-401	MW-401	MW-401	MW-402	MW-402	MW-402	MW-403	MW-403	MW-403
		Sample Date:		8/30/2016	11/1/2016	1/3/2017	3/20/2017	6/5/2017	6/5/2017	11/1/2016	1/4/2017	3/22/2017	6/6/2017	1/3/2017	3/20/2017	6/5/2017	1/3/2017	3/20/2017	6/5/2017	1/5/2017	3/20/2017	6/5/2017	1/4/2017	3/22/2017	6/5/2017
		GW-2	GW-3						Field Dup																
VPH																									
(ug/L)	C9-C10 Aromatics	4,000	50,000	250 U	50 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	100 U	50 U	50 U	50 U	50 U	50 U
	C5-C8 Aliphatics	3,000	50,000	250 U	50 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	100 U	50 U	50 U	50 U	50 U	50 U
	C9-C12 Aliphatics	5,000	50,000	250 U	50 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	100 U	50 U	50 U	50 U	50 U	50 U
	Benzene	1,000	10,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Toluene	50,000	40,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Ethylbenzene	20,000	5,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	p/m-Xylene	NS	NS	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	o-Xylene	NS	NS	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Xylenes (total)	3,000	5,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Methyl tert butyl ether	50,000	50,000	15 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
	Naphthalene	700	20,000	20 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	20 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	8.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
EPH																									
(ug/L)	C9-C18 Aliphatics	5,000	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C19-C36 Aliphatics	NS	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C11-C22 Aromatics	50,000	5,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	Naphthalene	700	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	2-Methylnaphthalene	2,000	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthylene	10,000	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluorene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Phenanthrene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Anthracene	NS	30	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluoranthene	NS	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Pyrene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)anthracene	NS	1,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Chrysene	NS	70	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(b)fluoranthene	NS	400	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(k)fluoranthene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)pyrene	NS	500	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Indeno(1,2,3-cd)Pyrene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Dibenzo(a,h)anthracene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(ghi)perylene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Metals, dissolved																									
(ug/L)	Antimony	NS	8,000	50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	**7.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	**106**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	7.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	**596**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(ug/L)	Antimony	NS	8,000	50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	**7.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	**104**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	7.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	**53**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
NS - No MassDEP standards exist for this analyte.
U - Analyte was not detected at specified quantitation limit.
Values in **bold** indicate the analyte was detected.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.

Table 4
Summary of Analytical Results for Groundwater Samples -- 2016 and 2017
IRA Completion Report
Atlantic Bridge
Weymouth, Massachusetts

Analysis	Analyte	Sample Location:		MW-404			MW-405			MW-406						MW-407			MW-408			MW-409		
		Sample ID:		MW-404	MW-404	MW-404	MW-405	MW-405	MW-405	MW-406	DUP-2	MW-406	DUP-1	MW-406	DUP-2	MW-407	MW-407	MW-407	MW-408	MW-408	MW-408	MW-409	MW-409	MW-409
		Sample Date:		1/5/2017	3/23/2017	6/6/2017	1/4/2017	3/23/2017	6/6/2017	1/5/2017	1/5/2017	3/21/2017	3/21/2017	6/7/2017	6/7/2017	1/5/2017	3/21/2017	6/7/2017	1/5/2017	3/21/2017	6/6/2017	1/4/2017	3/22/2017	6/6/2017
		GW-2	GW-3								Field Dup		Field Dup		Field Dup									
VPH																								
(ug/L)	C9-C10 Aromatics	4,000	50,000	100 U	50 U	50 U	50 U	50 U	50 U	250 U	250 U	50 U	50 U	50 U	50 U	250 U	50 U	**68.3**	250 U	50 U	50 U	50 U	50 U	50 U
	C5-C8 Aliphatics	3,000	50,000	100 U	50 U	50 U	50 U	50 U	50 U	250 U	250 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U
	C9-C12 Aliphatics	5,000	50,000	100 U	50 U	50 U	50 U	50 U	50 U	250 U	250 U	50 U	50 U	50 U	50 U	250 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U
	Benzene	1,000	10,000	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Toluene	50,000	40,000	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Ethylbenzene	20,000	5,000	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	**3.22**	**3.11**	2.0 U	2.0 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	p/m-Xylene	NS	NS	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	o-Xylene	NS	NS	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Xylenes (total)	3,000	5,000	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Methyl tert butyl ether	50,000	50,000	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	15 U	15 U	3.0 U	3.0 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
	Naphthalene	700	20,000	8.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	20 U	20 U	**6.66**	**6.72**	4.0 U	4.0 U	20 U	4.0 U	**7.57**	20 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
EPH																								
(ug/L)	C9-C18 Aliphatics	5,000	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C19-C36 Aliphatics	NS	50,000	100 U	**223**	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C11-C22 Aromatics	50,000	5,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	**102**	100 U	100 U	100 U	100 U	100 U	**178**	100 U	100 U	100 U	100 U	100 U	100 U
	Naphthalene	700	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	2-Methylnaphthalene	2,000	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthylene	10,000	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluorene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Phenanthrene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Anthracene	NS	30	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluoranthene	NS	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Pyrene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)anthracene	NS	1,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Chrysene	NS	70	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(b)fluoranthene	NS	400	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(k)fluoranthene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)pyrene	NS	500	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Indeno(1,2,3-cd)Pyrene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Dibenzo(a,h)anthracene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(ghi)perylene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Metals, dissolved																								
(ug/L)	Antimony	NS	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(ug/L)	Antimony	NS	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
NS - No MassDEP standards exist for this analyte.
U - Analyte was not detected at specified quantitation limit.
Values in **bold** indicate the analyte was detected.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.

Table 4
Summary of Analytical Results for Groundwater Samples -- 2016 and 2017
IRA Completion Report
Atlantic Bridge
Weymouth, Massachusetts

Analysis	Analyte	Sample Location:		MW-410			MW-411			MW-412				MW-413		
		Sample ID:		MW-410	MW-410	MW-410	MW-411	MW-411	MW-411	MW-412	DUP-1	MW-412	MW-412	MW-413	MW-413	MW-413
		Sample Date:		1/6/2017	3/21/2017	6/7/2017	1/4/2017	3/22/2017	6/7/2017	1/5/2017	1/5/2017	3/22/2017	6/6/2017	1/5/2017	3/22/2017	6/6/2017
		GW-2	GW-3								Field Dup					
VPH																
(ug/L)	C9-C10 Aromatics	4,000	50,000	250 U	50 U	50 U	50 U	50 U	50 U	250 U	250 U	50 U	50 U	250 U	50 U	50 U
	C5-C8 Aliphatics	3,000	50,000	250 U	50 U	50 U	50 U	50 U	50 U	250 U	250 U	50 U	50 U	250 U	50 U	50 U
	C9-C12 Aliphatics	5,000	50,000	250 U	50 U	50 U	50 U	50 U	50 U	250 U	250 U	50 U	50 U	250 U	50 U	50 U
	Benzene	1,000	10,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
	Toluene	50,000	40,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
	Ethylbenzene	20,000	5,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
	p/m-Xylene	NS	NS	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
	o-Xylene	NS	NS	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
	Xylenes (total)	3,000	5,000	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
	Methyl tert butyl ether	50,000	50,000	15 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	15 U	15 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U
	Naphthalene	700	20,000	20 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	20 U	20 U	4.0 U	4.0 U	20 U	4.0 U	4.0 U
EPH																
(ug/L)	C9-C18 Aliphatics	5,000	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C19-C36 Aliphatics	NS	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C11-C22 Aromatics	50,000	5,000	100 U	**125**	100 U	100 U	100 U	100 U	**102**	100 U	100 U	100 U	100 U	100 U	100 U
	Naphthalene	700	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	2-Methylnaphthalene	2,000	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthylene	10,000	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Acenaphthene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluorene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Phenanthrene	NS	10,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Anthracene	NS	30	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Fluoranthene	NS	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Pyrene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)anthracene	NS	1,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Chrysene	NS	70	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(b)fluoranthene	NS	400	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(k)fluoranthene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(a)pyrene	NS	500	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Indeno(1,2,3-cd)Pyrene	NS	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Dibenzo(a,h)anthracene	NS	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	Benzo(ghi)perylene	NS	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Metals, dissolved																
(ug/L)	Antimony	NS	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																
(ug/L)	Antimony	NS	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
NS - No MassDEP standards exist for this analyte.
U - Analyte was not detected at specified quantitation limit.
Values in **bold** indicate the analyte was detected.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.

Table 4
Summary of Analytical Results for Groundwater Samples -- 2016 and 2017
IRA Completion Report
Atlantic Bridge
Weymouth, Massachusetts

Analysis	Analyte	Sample Location:		MW-414			MW-415			MW-416			MW-417			
		Sample ID:		MW-414	MW-414	MW-414	MW-415	MW-415	MW-415	MW-416	MW-416	MW-416	MW-417	MW-417	DUP-2	MW-417
		Sample Date:		1/6/2017	3/21/2017	6/7/2017	1/5/2017	3/23/2017	6/6/2017	1/3/2017	3/23/2017	6/7/2017	1/3/2017	3/23/2017	3/23/2017	6/7/2017
		GW-2	GW-3												Field Dup	
VPH																
(ug/L)	C9-C10 Aromatics	4,000	50,000	250 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
	C5-C8 Aliphatics	3,000	50,000	250 U	50 U	50 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
	C9-C12 Aliphatics	5,000	50,000	250 U	50 U	**58.3**	250 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
	Benzene	1,000	10,000	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Toluene	50,000	40,000	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Ethylbenzene	20,000	5,000	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	p/m-Xylene	NS	NS	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	o-Xylene	NS	NS	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Xylenes (total)	3,000	5,000	10 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Methyl tert butyl ether	50,000	50,000	15 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
	Naphthalene	700	20,000	20 U	4.0 U	4.0 U	20 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
EPH																
(ug/L)	C9-C18 Aliphatics	5,000	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C19-C36 Aliphatics	NS	50,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	C11-C22 Aromatics	50,000	5,000	**188**	**105**	**131**	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
	Naphthalene	700	20,000	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	2-Methylnaphthalene	2,000	20,000	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Acenaphthylene	10,000	40	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Acenaphthene	NS	10,000	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Fluorene	NS	40	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Phenanthrene	NS	10,000	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Anthracene	NS	30	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Fluoranthene	NS	200	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Pyrene	NS	20	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Benzo(a)anthracene	NS	1,000	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Chrysene	NS	70	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Benzo(b)fluoranthene	NS	400	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Benzo(k)fluoranthene	NS	100	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Benzo(a)pyrene	NS	500	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Indeno(1,2,3-cd)Pyrene	NS	100	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Dibenzo(a,h)anthracene	NS	40	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
	Benzo(ghi)perylene	NS	20	10 U	10.6 U	10.6 U	10 U	10 U	10 U	10 U	10 U	10 U	10.9 U	10 U	10 U	10 U
Metals, dissolved																
(ug/L)	Antimony	NS	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																
(ug/L)	Antimony	NS	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NS	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NS	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NS	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	NS	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	NS	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	NS	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NS	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	NS	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NS	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	NS	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	NS	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
NS - No MassDEP standards exist for this analyte.
U - Analyte was not detected at specified quantitation limit.
Values in **bold** indicate the analyte was detected.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.

Table 5
Analytical Results for LNAPL with Micro-Scale Mobility
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Analysis	Sample ID:	B-404	B-406		B-407	B-411	B-412		B-413	B-414
	Sample Depth (ft.):	12	11.8	12.5	11.8	14	11.5	13	14-15	14
	Sample Date:	12/14/2016	12/14/2016	12/14/2016	12/15/2016	12/12/2016	12/12/2016	12/12/2016	12/12/2016	12/13/2016
	Analyte									
VPH										
(mg/kg)	C9-C10 Aromatics	NA	NA	**44.2**	NA	NA	NA	NA	NA	NA
	C5-C8 Aliphatics	NA	NA	**63**	NA	NA	NA	NA	NA	NA
	C9-C12 Aliphatics	NA	NA	**375**	NA	NA	NA	NA	NA	NA
	Benzene	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA
	Toluene	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA
	Ethylbenzene	NA	NA	**3.89**	NA	NA	NA	NA	NA	NA
	p/m-xylene	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA
	o-xylene	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA
	Xylenes (total)	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA
	Methyl tert butyl ether (MTBE)	NA	NA	0.215 U	NA	NA	NA	NA	NA	NA
	Naphthalene	NA	NA	**17.3**	NA	NA	NA	NA	NA	NA
EPH										
(mg/kg)	C9-C18 Aliphatics	**12,700**	**5,360**	**11,200**	**12,300**	**13,600**	**2,490**	**11,000**	**11,200**	**8,220**
	C19-C36 Aliphatics	**22,000**	**12,000**	**16,800**	**21,200**	**17,700**	**12,300**	**26,000**	**26,300**	**13,200**
	C11-C22 Aromatics	**27,800**	**13,400**	**20,000**	**19,800**	**19,000**	**20,400**	**26,200**	**28,200**	**14,100**
	Naphthalene	24.8 U	10.2 U	**19.6**	**14.5**	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	2-Methylnaphthalene	24.8 U	10.2 U	**73.4**	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Acenaphthylene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Acenaphthene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Fluorene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Phenanthrene	24.8 U	10.2 U	**28.4**	**21.5**	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Anthracene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Fluoranthene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Pyrene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Benzo(a)anthracene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Chrysene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Benzo(b)fluoranthene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Benzo(k)fluoranthene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Benzo(a)pyrene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Indeno(1,2,3-cd)pyrene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Dibenz(a,h)anthracene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
	Benzo(g,h,i)perylene	24.8 U	10.2 U	14.5 U	10.5 U	26.8 U	11 U	32.8 U	30.3 U	21.8 U
Total Petroleum Hydrocarbons										
(mg/kg)	TPH (Calculated)	**62,500**	**30,760**	**48,625**	**53,336**	**50,300**	**35,190**	**63,200**	**65,700**	**35,520**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

NA - Sample not analyzed for the listed analyte.

U - Analyte was not detected at specified quantitation limit.

Values in **bold** indicate the analyte was detected.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons

Table 6
In-Situ Horizontal Hydraulic Conductivity Estimates
IRA Completion Report
Atlantic Bridge Project
Weymouth Compressor Station
6 and 50 Bridge Street, Weymouth, Massachusetts

Monitoring Well Construction Data						Low Flow Sampling Data - January 3-6, 2017				Calculations					
Monitoring Well Identification	Estimated Borehole Diameter (inch)	Well Inside Diameter (inch)	Well Inside Diameter (inch)	Depth Top of Well Screen (ft -bgs)	Depth Base of Well Screen (ft -bgs)	Pre-Pumping DTW (ft -bgs)	Steady-State Pumping DTW (ft -bgs)	Steady-State Drawdown (ft)	Steady-State Pumping Rate (mls/min)	Intake Screen Length, L (cm)	Hole Intake Diameter, D (cm)	Steady State Pumping Rate, Q (L/min)	Calculated Drawdown, H (cm)	Estimated Kh (cm/s)	Estimated Kh (ft/day)
MW-201	9	2	2	5	20	-	-	-	-	-	-	-	-	-	-
MW-202	9	2	2	4	19	12.23	12.26	0.03	360	206.35	22.86	0.36	0.91	1.47E-02	4.18E+01
MW-203	9	2	2	4	19	13.32	13.39	0.07	270	173.13	22.86	0.27	2.13	5.29E-03	1.50E+01
MW-204	9	2	2	5	20	13.28	13.32	0.04	290	204.83	22.86	0.29	1.22	8.89E-03	2.52E+01
MW-205	9	2	2	5	20	15	15.02	0.02	500	152.40	22.86	0.5	0.61	3.70E-02	1.05E+02
MW-206	9	2	2	9	19	14.18	14.2	0.02	350	146.91	22.86	0.35	0.61	2.65E-02	4.52E+01
MW-400	5	2	2	8	23	11.31	11.35	0.04	220	356.31	12.7	0.22	1.22	5.41E-03	1.53E+01
MW-401	5	2	2	7.6	22.6	14.38	14.42	0.04	150	250.55	12.7	0.15	1.22	4.79E-03	1.36E+01
MW-402	5	2	2	8	23	14.99	15.03	0.04	300	244.14	12.7	0.3	1.22	9.75E-03	2.76E+01
MW-403	5	2	2	8	23	13.65	13.67	0.02	270	284.99	12.7	0.27	0.61	1.57E-02	4.44E+01
MW-404	9	4	4	5.4	20.4	12.85	12.88	0.03	375	230.12	22.86	0.375	0.91	1.43E-02	4.05E+01
MW-405	5	2	2	6.5	21.5	14.33	14.35	0.02	375	218.54	12.7	0.375	0.61	2.64E-02	7.49E+01
MW-406	5	2	2	8	23	13.84	13.89	0.05	320	279.20	12.7	0.32	1.52	7.57E-03	2.15E+01
MW-407	5	2	2	8	23	14.57	14.57	-	-	-	-	-	-	-	-
MW-408	5	2	2	8	23	13.36	13.39	0.03	300	293.83	12.7	0.3	0.91	1.14E-02	3.24E+01
MW-409	5	2	2	8	23	13.08	13.18	0.10	270	302.36	12.7	0.27	3.05	3.00E-03	8.51E+00
MW-410	5	2	2	8	23	-	-	-	-	-	-	-	-	-	-
MW-411	5	2	2	8	23	12.86	12.88	0.02	400	309.07	12.7	0.4	0.61	2.19E-02	6.20E+01
MW-412	9	4	4	8	23	13.37	13.42	0.05	200	293.52	22.86	0.2	1.52	3.86E-03	1.09E+01
MW-413	9	4	4	8	23	13.71	13.75	0.04	330	283.16	22.86	0.33	1.22	8.14E-03	2.31E+01
MW-414	9	4	4	8	23	14.65	14.65	-	-	-	-	-	-	-	-
MW-415	5	2	2	8	23	15.35	15.39	0.04	330	233.17	12.7	0.33	1.22	1.11E-02	3.14E+01
MW-416	5	2	2	8	23	11.32	11.37	0.05	240	356.01	12.7	0.24	1.52	4.74E-03	1.34E+01
MW-417	5	2	2	8	23	11.07	11.07	-	-	-	-	-	-	-	-
													Min	3.00E-03	8.51E+00
													Max	3.70E-02	1.05E+02
													Geomean	9.97E-03	2.75E+01

Abbreviations:
amsl - above mean sea level (vertical datum is North American Vertical Datum of 1988)
cm - centimeters
DTW - Depth to Water
ft-bgs - feet below ground surface
Kh - hydraulic conductivity in the horizontal direction.
L - liters
mls - milliliters

Notes:
1) Kh calculated using the Hvorslev (1951) method.

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-201	8/29/2016	945	9.6	15.70	NM[2]	-	-	-	13.9	2.78	11.12	-	-	-	
	8/29/2016	1600	0.48	15.70	NM[2]	-	-	-	14.8	2.78	12.02	-	-	-	
	9/22/2016	755	4.0	15.70	NM[2]	-	-	-	13.8	2.78	11.02	-	-	-	
	9/27/2016	840	9.2	15.70	NM[2]	-	-	-	14.1	2.78	11.32	-	-	-	Sock removed, placed in drum, and replaced.
	10/6/2016	930	1.5	15.70	NM[2]	-	-	-	13.99	2.78	11.21	-	-	-	Sock removed, placed in drum, and replaced.
	10/13/2016	810	8.5	15.70	NM[2]	-	-	-	14.2	2.78	11.42	-	-	-	Sock removed, placed in drum, and replaced.
	10/20/2016	845	0	15.70	NM[2]	-	-	-	13.2	2.78	10.42	-	-	-	Sock removed, placed in drum, and replaced.
	10/20/2016	NM	NM	15.70	NM[2]	-	-	-	NM	2.78	NM	-	-	-	Sock removed, placed in drum, and replaced.
	10/27/2016	1045	9.5	15.70	NM[2]	-	-	-	13.8	2.78	11.02	-	-	-	Sock removed, placed in drum, and not replaced.
	11/1/2016	NM	NM	15.70	NM[2]	-	-	-	NM	2.78	NM	-	-	-	
	11/1/2016	NM	NM	15.70	NM[2]	-	-	-	NM	2.78	NM	-	-	-	Bailer hung in well to attempt to collect product.
	11/3/2016	924	2.4	15.70	NM[2]	-	-	-	13.97	2.78	11.19	-	-	-	DTP measured after bailer removed.
	11/3/2016	1517	9.3	15.70	13.54	13.51	10.76	-	13.51	2.78	10.73	0.03	+/- 0.01	-	DTP measured after sampling. Sock deployed
	11/10/2016	NM	NM	15.70	NM[2]	-	-	-	NM	2.78	NM	-	-	-	Sock removed, placed in drum.[5]
	11/17/2016	1305	10.94	15.70	12.83	12.51	10.05	-	12.5	2.78	9.72	0.33	+/- 0.01	-	Plunker/water seeking paste.[5]
	12/1/2016	915	6.04	15.70	13.9	13.75	11.12	-	13.75	2.78	10.97	0.15	+/- 0.01	-	Plunker/water seeking paste.[5]
	1/4/2017	1330	7.62	15.70	13.9	13.66	11.12	1.80	13.65	2.78	10.87	0.25	+ 0 ft /- 0.1	450	Interface probe/water seeking paste.[4,5]
	1/17/2017	1131	4.31	15.70	14.22	14.05	11.44	1.48	14.05	2.78	11.27	0.17	+/- 0.03	50	interface probe/water seeking paste.[5]
	1/23/2017	1115	5.15	15.70	13.53	13.38	10.75	2.17	13.38	2.78	10.6	0.15	+/- 0.03	-	interface probe/water seeking paste.[5]
	1/30/2017	1120	9.15	15.70	13.96	13.84	11.18	1.74	13.84	2.78	11.06	0.12	+/- 0.03	-	interface probe/water seeking paste.[5]
	2/6/2017	1140	1.2	15.70	13.84	13.52	11.06	1.86	13.51	2.78	10.73	0.33	+/- 0.01	-	interface probe/water seeking paste.[5]
	2/14/2017	850	1.35	15.70	13.14	12.92	10.36	2.56	12.92	2.78	10.14	0.22	+/- 0.01	300	interface probe/water seeking paste.[5]
	2/20/2017	1100	2.58	15.70	13.71	13.54	10.93	1.99	13.54	2.78	10.76	0.17	+/- 0.01	-	interface probe/water seeking paste.[5]
	2/27/2017	1015	9.23	15.70	13.96	13.91	11.18	1.74	13.91	2.78	11.13	0.05	+/- 0.01	-	interface probe/water seeking paste.[5]
	3/8/2017	1013	7.02	15.70	13.23	13.18	10.45	2.47	13.18	2.78	10.4	0.05	+/- 0.01	-	interface probe/water seeking paste.[5]
	3/13/2017	1115	6.88	15.70	14.09	13.68	11.31	1.61	14.51	2.78	11.73	0.42	+/- 0.03	-	interface probe/water seeking paste.[5]
	3/20/2017	1035	2.13	15.70	14.26	13.85	11.48	1.44	13.84	2.78	11.06	0.42	+/- 0.01	-	interface probe/water seeking paste.[5]
	4/3/2017	1105	-0.63	15.70	13.16	12.84	10.38	2.54	12.83	2.78	10.05	0.33	+/- 0.01	-	interface probe/water seeking paste.[5]
	4/10/2017	940	7.21	15.70	14.12	13.47	11.34	1.58	13.46	2.78	10.68	0.66	+ 0 /- 0.1	-	interface probe.[5]
	4/17/2017	1125	1.43	15.70	15.01	13.80	12.23	0.69	13.77	2.78	10.99	1.24	+ 0 /- 0.1	118	interface probe.[5] Gauged prior to attempting skimming test.
	4/18/2017	1021	1.54	15.70	13.83	13.73	11.05	1.87	13.73	2.78	10.95	0.1	+ 0 /- 0.1	-	interface probe.[5] New sock installed.
	4/25/2017	952	9.49	15.70	13.89	13.88	11.11	1.81	13.88	2.78	11.1	0.01	+/- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/1/2017	1105	-0.44	15.70	13.25	13.25	10.47	2.45	13.25	2.78	10.47	0	+/- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/15/2017	1025	1.58	15.70	13.33	13.33	10.55	2.37	13.33	2.78	10.55	0	+/- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/30/2017	1102	-0.02	15.70	13.1	12.98	10.32	2.6	12.98	2.78	10.2	0.12	+/- 0.03	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	6/6/2017	1230	7.12	15.70	13.05	12.97	10.27	2.65	12.97	2.78	10.19	0.08	+/- 0.03	-	interface probe.[5] Sock removed, well gauged, and no sock installed.
	6/13/2017	1015	1.93	15.70	13.68	13.64	10.9	2.06	13.64	2.78	10.86	0.04	+/- 0.03	-	interface probe.[5] Well gauged, and no sock installed.
	6/19/2017	1115	3.85	15.70	13.36	13.35	10.58	2.34	13.35	2.78	10.57	0.01	+/- 0.01	-	interface probe/water seeking paste.[5] No sock installed.
	10/6/2017	1031	8.64	15.70	14.41	13.91	11.63	1.79	13.9	2.78	11.12	0.51	+/- 0.01	-	interface probe/water seeking paste.[5] No sock installed.

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MW-202	8/29/2016	700	4.2	14.50	12.69	-	10.28	1.81	-	2.41	-	-	-	-	
	8/29/2016	1600	0.48	14.50	12.65	-	10.24	1.85	-	2.41	-	-	-	-	
	9/22/2016	722	4.6	14.50	12.4	-	9.99	2.10	-	2.41	-	-	-	-	
	9/27/2016	810	8.8	14.50	12.72	-	10.31	1.78	-	2.41	-	-	-	-	
	10/6/2016	830	2	14.50	12.68	-	10.27	1.82	-	2.41	-	-	-	-	
	10/13/2016	735	8	14.50	12.78	-	10.37	1.72	-	2.41	-	-	-	-	
	10/20/2016	715	2	14.50	12.09	-	9.68	2.41	-	2.41	-	-	-	-	
	10/20/2016	1330	10	14.50	12.35	-	9.94	2.15	-	2.41	-	-	-	-	
	10/27/2016	930	9.3	14.50	12.79	-	10.38	1.71	-	2.41	-	-	-	-	
	11/1/2016	800	1.2	14.50	12.54	-	10.13	1.96	-	2.41	-	-	-	-	
	11/1/2016	1701	4	14.50	12.39	-	9.98	2.11	-	2.41	-	-	-	-	
	11/3/2016	839	1.3	14.50	12.63	-	10.22	1.87	-	2.41	-	-	-	-	
	11/3/2016	1521	9.15	14.50	12.58	-	10.17	1.92	-	2.41	-	-	-	-	
	11/10/2016	1210	1.46	14.50	12.58	-	10.17	1.92	-	2.41	-	-	-	-	
	11/17/2016	1245	11	14.50	12.23	-	9.82	2.27	-	2.41	-	-	-	-	
	12/1/2016	845	5.06	14.50	12.49	-	10.08	2.01	-	2.41	-	-	-	-	
	1/3/2017	1210	6.84	14.50	12.83	-	10.42	1.67	-	2.41	-	-	-	-	
	1/17/2017	812	0.49	14.50	12.72	-	10.31	1.78	-	2.41	-	-	-	-	
	1/23/2017	803	9.17	14.50	12.84	-	10.43	1.66	-	2.41	-	-	-	-	
	1/30/2017	745	1.13	14.50	12.47	-	10.06	2.03	-	2.41	-	-	-	-	
	2/6/2017	732	10.28	14.50	12.72	-	10.31	1.78	-	2.41	-	-	-	-	
	2/14/2017	745	0.05	14.50	11.91	-	9.5	2.59	-	2.41	-	-	-	-	
	2/20/2017	740	7.96	14.50	12.47	-	10.06	2.03	-	2.41	-	-	-	-	
	2/27/2017	725	0.86	14.50	12.51	-	10.1	1.99	-	2.41	-	-	-	-	
	3/8/2017	738	10.54	14.50	12.78	-	10.37	1.72	-	2.41	-	-	-	-	
	3/13/2017	838	1.15	14.50	12.81	-	10.4	1.69	-	2.41	-	-	-	-	
	3/20/2017	802	6.42	14.50	12.64	-	10.23	1.86	-	2.41	-	-	-	-	
	4/3/2017	745	6.82	14.50	11.71	-	9.3	2.79	-	2.41	-	-	-	-	
	4/10/2017	736	2.32	14.50	12.22	-	9.81	2.28	-	2.41	-	-	-	-	
	4/18/2017	816	4.86	14.50	12.60	-	10.19	1.9	-	2.41	-	-	-	-	
	4/25/2017	819	5.7	14.50	12.59	-	10.18	1.91	-	2.41	-	-	-	-	
	5/1/2017	844	0.63	14.50	12.08	-	9.67	2.42	-	2.41	-	-	-	-	
	5/15/2017	728	2.38	14.50	12.12	-	9.71	2.38	-	2.41	-	-	-	-	
	5/30/2017	723	3.57	14.50	11.83	-	9.42	2.67	-	2.41	-	-	-	-	
	6/5/2017	840	8.9	14.50	12.62	-	10.21	1.88	-	2.41	-	-	-	-	
	6/13/2017	727	1.53	14.50	12.44	-	10.03	2.06	-	2.41	-	-	-	-	
	6/19/2017	806	10.55	14.50	12.67	-	10.26	1.83	-	2.41	-	-	-	-	
	10/6/2017	729	1.18	14.50	12.61	-	10.2	1.89	-	2.41	-	-	-	-	

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MW-203	8/29/2016	945	9.6	14.88	13.26	-	10.4	1.62	-	2.86	-	-	-	-	
	8/29/2016	1600	0.48	14.88	13.05	-	10.19	1.83	-	2.86	-	-	-	-	
	9/22/2016	735	4.4	14.88	12.51	-	9.65	2.37	-	2.86	-	-	-	-	
	9/27/2016	820	8.9	14.88	13.32	-	10.46	1.56	-	2.86	-	-	-	-	
	10/6/2016	848	1.9	14.88	13.14	-	10.28	1.74	-	2.86	-	-	-	-	
	10/13/2016	740	8.1	14.88	13.40	-	10.54	1.48	-	2.86	-	-	-	-	
	10/20/2016	720	1.8	14.88	12.25	-	9.39	2.63	-	2.86	-	-	-	-	
	10/20/2016	1332	10	14.88	12.87	-	10.01	2.01	-	2.86	-	-	-	-	
	10/27/2016	932	9.3	14.88	13.39	-	10.53	1.49	-	2.86	-	-	-	-	
	11/1/2016	803	1.2	14.88	12.98	-	10.12	1.9	-	2.86	-	-	-	-	
	11/1/2016	1658	4	14.88	12.56	-	9.7	2.32	-	2.86	-	-	-	-	
	11/3/2016	841	1.4	14.88	13.08	-	10.22	1.8	-	2.86	-	-	-	-	
	11/3/2016	1522	9.15	14.88	12.87	-	10.01	2.01	-	2.86	-	-	-	-	
	11/10/2016	1212	1.42	14.88	12.86	-	10	2.02	-	2.86	-	-	-	-	
	11/17/2016	1246	11	14.88	12.51	-	9.65	2.37	-	2.86	-	-	-	-	
	12/1/2016	847	5.07	14.88	13.01	-	10.15	1.87	-	2.86	-	-	-	-	
	1/3/2017	1220	7.19	14.88	13.44	-	10.58	1.44	-	2.86	-	-	-	-	
	1/17/2017	816	0.45	14.88	13.14	-	10.28	1.74	-	2.86	-	-	-	-	
	1/23/2017	806	9.16	14.88	13.27	-	10.41	1.61	-	2.86	-	-	-	-	
	1/30/2017	747	1.19	14.88	12.91	-	10.05	1.97	-	2.86	-	-	-	-	
	2/6/2017	733	10.28	14.88	13.14	-	10.28	1.74	-	2.86	-	-	-	-	
	2/14/2017	750	0.12	14.88	12.11	-	9.25	2.77	-	2.86	-	-	-	-	
	2/20/2017	742	7.91	14.88	12.94	-	10.08	1.94	-	2.86	-	-	-	-	
	2/27/2017	726	0.9	14.88	13.01	-	10.15	1.87	-	2.86	-	-	-	-	
	3/8/2017	739	10.54	14.88	13.21	-	10.35	1.67	-	2.86	-	-	-	-	
	3/13/2017	840	1.2	14.88	13.24	-	10.38	1.64	-	2.86	-	-	-	-	
	3/20/2017	804	6.38	14.88	12.92	-	10.06	1.96	-	2.86	-	-	-	-	
	4/3/2017	747	6.74	14.88	11.84	-	8.98	3.04	-	2.86	-	-	-	-	
	4/10/2017	738	2.38	14.88	12.68	-	9.82	2.2	-	2.86	-	-	-	-	
	4/18/2017	818	4.81	14.88	12.83	-	9.97	2.05	-	2.86	-	-	-	-	
	4/25/2017	821	5.78	14.88	13.06	-	10.2	1.82	-	2.86	-	-	-	-	
	5/1/2017	852	0.31	14.88	12.23	-	9.37	2.65	-	2.86	-	-	-	-	
	5/15/2017	729	2.35	14.88	12.22	-	9.36	2.66	-	2.86	-	-	-	-	
	5/30/2017	724	3.52	14.88	11.84	-	8.98	3.04	-	2.86	-	-	-	-	
	6/5/2017	900	9.1	14.88	13.158	-	10.298	1.72	-	2.86	-	-	-	-	
	6/13/2017	729	1.48	14.88	12.68	-	9.82	2.2	-	2.86	-	-	-	-	
	6/19/2017	807	9.44	14.88	13.08	-	10.22	1.8	-	2.86	-	-	-	-	
	10/6/2017	731	1.24	14.88	12.97	-	10.11	1.91	-	2.86	-	-	-	-	

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MW-204	8/29/2016	945	9.6	15.55	14.04	-	11.19	1.51	-	2.85	-	-	-	-	
	8/29/2016	1500	0.48	15.55	13.8	-	10.95	1.75	-	2.85	-	-	-	-	
	9/22/2016	740	4.2	15.55	13.32	-	10.47	2.23	-	2.85	-	-	-	-	
	9/27/2016	826	9	15.55	14.17	-	11.32	1.38	-	2.85	-	-	-	-	
	10/6/2016	905	1.8	15.55	14.01	-	11.16	1.54	-	2.85	-	-	-	-	
	10/13/2016	745	8.2	15.55	14.26	-	11.41	1.29	-	2.85	-	-	-	-	
	10/20/2016	728	1.9	15.55	13.08	-	10.23	2.47	-	2.85	-	-	-	-	
	10/20/2016	1337	10.1	15.55	13.82	-	10.97	1.73	-	2.85	-	-	-	-	
	10/27/2016	1938	9.4	15.55	14.18	-	11.33	1.37	-	2.85	-	-	-	-	
	11/1/2016	807	1.2	15.55	13.87	-	11.02	1.68	-	2.85	-	-	-	-	
	11/1/2016	1655	4	15.55	13.33	-	10.48	2.22	-	2.85	-	-	-	-	
	11/3/2016	843	1.4	15.55	13.96	-	11.11	1.59	-	2.85	-	-	-	-	
	11/3/2016	1526	9.18	15.55	13.58	-	10.73	1.97	-	2.85	-	-	-	-	
	11/10/2016	1214	1.39	15.55	13.66	-	10.81	1.89	-	2.85	-	-	-	-	
	11/17/2016	1248	11.01	15.55	13.32	-	10.47	2.23	-	2.85	-	-	-	-	
	12/1/2016	849	5.07	15.55	13.87	-	11.02	1.68	-	2.85	-	-	-	-	
	1/3/2017	1240	7.87	15.55	14.28	-	11.43	1.27	-	2.85	-	-	-	-	
	1/17/2017	819	0.41	15.55	14.04	-	11.19	1.51	-	2.85	-	-	-	-	
	1/23/2017	810	9.13	15.55	14.02	-	11.17	1.53	-	2.85	-	-	-	-	
	1/30/2017	750	1.25	15.55	13.81	-	10.96	1.74	-	2.85	-	-	-	-	
	2/6/2017	737	10.21	15.55	13.92	-	11.07	1.63	-	2.85	-	-	-	-	
	2/14/2017	755	0.16	15.55	12.98	-	10.13	2.57	-	2.85	-	-	-	-	
	2/20/2017	745	7.85	15.55	13.79	-	10.94	1.76	-	2.85	-	-	-	-	
	2/27/2017	728	0.99	15.55	13.96	-	11.11	1.59	-	2.85	-	-	-	-	
	3/8/2017	742	10.53	15.55	14.01	-	11.16	1.54	-	2.85	-	-	-	-	
	3/13/2017	747	0.15	15.55	14.15	-	11.3	1.4	-	2.85	-	-	-	-	
	3/20/2017	807	6.35	15.55	13.65	-	10.8	1.9	-	2.85	-	-	-	-	
	4/3/2017	749	6.65	15.55	12.61	-	9.76	2.94	-	2.85	-	-	-	-	
	4/10/2017	741	2.47	15.55	13.66	-	10.81	1.89	-	2.85	-	-	-	-	
	4/18/2017	821	4.72	15.55	13.67	-	10.82	1.88	-	2.85	-	-	-	-	
	4/25/2017	823	5.87	15.55	13.97	-	11.12	1.58	-	2.85	-	-	-	-	
	5/1/2017	854	0.24	15.55	13.06	-	10.21	2.49	-	2.85	-	-	-	-	
	5/15/2017	730	2.32	15.55	12.99	-	10.14	2.56	-	2.85	-	-	-	-	
	5/30/2017	727	3.37	15.55	12.62	-	9.77	2.93	-	2.85	-	-	-	-	
	6/5/2017	1015	8.89	15.55	13.82	-	10.97	1.73	-	2.85	-	-	-	-	
	6/13/2017	734	1.34	15.55	13.51	-	10.66	2.04	-	2.85	-	-	-	-	
	6/19/2017	809	9.41	15.55	13.85	-	11	1.7	-	2.85	-	-	-	-	
	10/6/2016	733	1.31	15.55	13.8	-	10.95	1.75	-	2.85	-	-	-	-	

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-205	8/29/2016	945	9.6	16.63	14.88	-	12.39	1.75	-	2.49	-	-	-	-	
	8/29/2016	1600	0.48	16.63	14.72	-	12.23	1.91	-	2.49	-	-	-	-	
	9/22/2016	745	4.1	16.63	14.3	-	11.81	2.33	-	2.49	-	-	-	-	
	9/27/2016	831	9.1	16.63	14.91	-	12.42	1.72	-	2.49	-	-	-	-	
	10/6/2016	915	1.75	16.63	14.83	-	12.34	1.80	-	2.49	-	-	-	-	
	10/13/2016	750	8.3	16.63	15.20	-	12.71	1.43	-	2.49	-	-	-	-	
	10/20/2016	735	1.5	16.63	13.94	-	11.45	2.69	-	2.49	-	-	-	-	
	10/20/2016	1340	10.2	16.63	14.40	-	11.91	2.23	-	2.49	-	-	-	-	
	10/27/2016	942	9.4	16.63	15.04	-	12.55	1.59	-	2.49	-	-	-	-	
	11/1/2016	812	1.2	16.63	14.62	-	12.13	2.01	-	2.49	-	-	-	-	
	11/1/2016	1652	4	16.63	14.37	-	11.88	2.26	-	2.49	-	-	-	-	
	11/3/2016	844	1.5	16.63	14.75	-	12.26	1.88	-	2.49	-	-	-	-	
	11/3/2016	1529	9.03	16.63	14.67	-	12.18	1.96	-	2.49	-	-	-	-	
	11/10/2016	1216	1.36	16.63	15.58	-	13.09	1.05	-	2.49	-	-	-	-	
	11/17/2016	1250	11	16.63	14.17	-	11.68	2.46	-	2.49	-	-	-	-	
	12/1/2016	851	5.2	16.63	14.65	-	12.16	1.98	-	2.49	-	-	-	-	
	1/3/2017	1300	8.52	16.63	15.03	-	12.54	1.60	-	2.49	-	-	-	-	
	1/17/2017	823	0.35	16.63	14.81	-	12.32	1.82	-	2.49	-	-	-	-	
	1/23/2017	814	9.11	16.63	14.97	-	12.48	1.66	-	2.49	-	-	-	-	
	1/30/2017	752	1.35	16.63	14.55	-	12.06	2.08	-	2.49	-	-	-	-	
	2/6/2017	740	10.13	16.63	14.88	-	12.39	1.75	-	2.49	-	-	-	-	
	2/14/2017	758	0.2	16.63	13.76	-	11.27	2.87	-	2.49	-	-	-	-	
	2/20/2017	748	7.79	16.63	14.74	-	12.25	1.89	-	2.49	-	-	-	-	
	2/27/2017	730	1.05	16.63	14.6	-	12.11	2.03	-	2.49	-	-	-	-	
	3/8/2017	744	10.52	16.63	14.89	-	12.4	1.74	-	2.49	-	-	-	-	
	3/13/2017	842	1.25	16.63	14.92	-	12.43	1.71	-	2.49	-	-	-	-	
	3/20/2017	809	6.23	16.63	14.72	-	12.23	1.91	-	2.49	-	-	-	-	
	4/3/2017	751	6.57	16.63	13.57	-	11.08	3.06	-	2.49	-	-	-	-	
	4/10/2017	744	2.57	16.63	14.27	-	11.78	2.36	-	2.49	-	-	-	-	
	4/18/2017	823	4.66	16.63	14.64	-	12.15	1.99	-	2.49	-	-	-	-	
	4/25/2017	826	6.01	16.63	14.65	-	12.16	1.98	-	2.49	-	-	-	-	
	5/1/2017	856	0.17	16.63	13.91	-	11.42	2.72	-	2.49	-	-	-	-	
	5/15/2017	734	2.2	16.63	14	-	11.51	2.63	-	2.49	-	-	-	-	
	5/30/2017	730	3.22	16.63	13.54	-	11.05	3.09	-	2.49	-	-	-	-	
	6/5/2017	1040	8.53	16.63	14.64	-	12.15	1.99	-	2.49	-	-	-	-	
	6/13/2017	736	1.29	16.63	14.45	-	11.96	2.18	-	2.49	-	-	-	-	
	6/19/2017	812	9.37	16.63	14.79	-	12.3	1.84	-	2.49	-	-	-	-	
	10/6/2017	738	1.48	16.63	14.6	-	12.11	2.03	-	2.49	-	-	-	-	

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-206	10/20/2016[3]	747	1.3	16.22	13.79	-	10.55	2.43	-	3.24	-	-	-	-	
	10/20/2016	1325	9.9	16.22	13.93	-	10.69	2.29	-	3.24	-	-	-	-	
	10/27/2016	1946	9.5	16.22	14.43	-	11.19	1.79	-	3.24	-	-	-	-	
	11/1/2016	818	1.2	16.22	14.22	-	10.98	2.0	-	3.24	-	-	-	-	
	11/1/2016	1644	4	16.22	14.18	-	10.94	2.04	-	3.24	-	-	-	-	
	11/3/2016	847	1.58	16.22	14.32	-	11.08	1.9	-	3.24	-	-	-	-	
	11/3/2016	1518	9.3	16.22	14.3	-	11.06	1.92	-	3.24	-	-	-	-	
	11/10/2016	1219	1.33	16.22	14.39	-	11.15	1.83	-	3.24	-	-	-	-	
	11/17/2016	1253	11	16.22	13.91	-	10.67	2.31	-	3.24	-	-	-	-	
	12/1/2016	854	5.26	16.22	14.34	-	11.1	1.88	-	3.24	-	-	-	-	
	1/3/2017	1340	9.57	16.22	14.54	-	11.3	1.68	-	3.24	-	-	-	-	
	1/17/2017	757	0.76	16.22	14.45	-	11.21	1.77	-	3.24	-	-	-	-	
	1/23/2017	755	9.2	16.22	14.57	-	11.33	1.65	-	3.24	-	-	-	-	
	1/30/2017	806	1.79	16.22	14.14	-	10.9	2.08	-	3.24	-	-	-	-	
	2/6/2017	751	9.92	16.22	14.41	-	11.17	1.81	-	3.24	-	-	-	-	
	2/14/2017	936	2.76	16.22	14.67	-	11.43	1.55	-	3.24	-	-	-	-	
	2/20/2017	759	7.55	16.22	14.14	-	10.9	2.08	-	3.24	-	-	-	-	
	2/27/2017	738	1.32	16.22	14.15	-	10.91	2.07	-	3.24	-	-	-	-	
	3/8/2017	753	10.48	16.22	14.49	-	11.25	1.73	-	3.24	-	-	-	-	
	3/13/2017	815	0.62	16.22	14.57	-	11.33	1.65	-	3.24	-	-	-	-	
	3/20/2017	824	5.81	16.22	14.47	-	11.23	1.75	-	3.24	-	-	-	-	
	4/3/2017	758	6.27	16.22	13.28	-	10.04	2.94	-	3.24	-	-	-	-	
	4/10/2017	757	2.99	16.22	13.88	-	10.64	2.34	-	3.24	-	-	-	-	
	4/18/2017	833	4.37	16.22	14.29	-	11.05	1.93	-	3.24	-	-	-	-	
	4/25/2017	835	6.41	16.22	14.34	-	11.1	1.88	-	3.24	-	-	-	-	
	5/1/2017	906	-0.18	16.22	13.75	-	10.51	2.47	-	3.24	-	-	-	-	
	5/15/2017	742	1.96	16.22	13.99	-	10.75	2.23	-	3.24	-	-	-	-	
	5/30/2017	744	2.53	16.22	13.48	-	10.24	2.74	-	3.24	-	-	-	-	
	6/6/2017	900	0.35	16.22	14.17	-	10.93	2.05	-	3.24	-	-	-	-	
	6/13/2017	750	0.94	16.22	14.15	-	10.91	2.07	-	3.24	-	-	-	-	
	6/19/2017	821	9.22	16.22	14.30	-	11.06	1.92	-	3.24	-	-	-	-	
	10/6/2017	748	1.84	16.22	14.46	-	11.22	1.76	-	3.24	-	-	-	-	

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-400	1/3/2017	1230	7.53	14.63	13.30	-	10.93	1.33	-	2.37	-	-	-	-	
	1/17/2017	814	0.47	14.63	13.02	-	10.65	1.61	-	2.37	-	-	-	-	
	1/23/2017	804	9.17	14.63	13.15	-	10.78	1.48	-	2.37	-	-	-	-	
	1/30/2017	815	2.11	14.63	12.78	-	10.41	1.85	-	2.37	-	-	-	-	
	2/6/2017	736	10.21	14.63	12.96	-	10.59	1.67	-	2.37	-	-	-	-	
	2/14/2017	752	0.11	14.63	11.96	-	9.59	2.67	-	2.37	-	-	-	-	
	2/20/2017	807	7.37	14.63	12.77	-	10.4	1.86	-	2.37	-	-	-	-	
	2/27/2017	747	1.68	14.63	12.91	-	10.54	1.72	-	2.37	-	-	-	-	
	3/8/2017	800	10.42	14.63	13.00	-	10.63	1.63	-	2.37	-	-	-	-	
	3/13/2017	745	0.12	14.63	13.13	-	10.76	1.5	-	2.37	-	-	-	-	
	3/20/2017	805	6.35	14.63	12.77	-	10.4	1.86	-	2.37	-	-	-	-	
	4/3/2017	802	6.1	14.63	11.76	-	9.39	2.87	-	2.37	-	-	-	-	
	4/10/2017	809	3.41	14.63	12.58	-	10.21	2.05	-	2.37	-	-	-	-	
	4/18/2017	840	4.17	14.63	12.72	-	10.35	1.91	-	2.37	-	-	-	-	
	4/25/2017	843	6.76	14.63	12.95	-	10.58	1.68	-	2.37	-	-	-	-	
	5/1/2017	914	-0.43	14.63	12.16	-	9.79	2.47	-	2.37	-	-	-	-	
	5/15/2017	750	1.73	14.63	12.12	-	9.75	2.51	-	2.37	-	-	-	-	
	5/30/2017	759	1.8	14.63	12.81	-	10.44	1.82	-	2.37	-	-	-	-	
	6/5/2017	945	9.15	14.63	12.97	-	10.6	1.66	-	2.37	-	-	-	-	
	6/13/2017	758	0.78	14.63	12.62	-	10.25	2.01	-	2.37	-	-	-	-	
	6/19/2017	831	9.02	14.63	12.86	-	10.49	1.77	-	2.37	-	-	-	-	
	10/6/2017	800	2.29	14.63	12.87	-	10.5	1.76	-	2.37	-	-	-	-	
MW-401	1/3/2017	1250	8.2	15.81	14.38	-	12.01	1.43	-	2.37	-	-	-	-	
	1/17/2017	827	0.34	15.81	14.18	-	11.81	1.63	-	2.37	-	-	-	-	
	1/23/2017	812	9.1	15.81	14.32	-	11.95	1.49	-	2.37	-	-	-	-	
	1/30/2017	743	1.07	15.81	13.87	-	11.5	1.94	-	2.37	-	-	-	-	
	2/6/2017	802	9.66	15.81	14.12	-	11.75	1.69	-	2.37	-	-	-	-	
	2/14/2017	815	0.49	15.81	13.11	-	10.74	2.70	-	2.37	-	-	-	-	
	2/20/2017	808	7.35	15.81	14.06	-	11.69	1.75	-	2.37	-	-	-		
	2/27/2017	748	1.71	15.81	13.96	-	11.59	1.85	-	2.37	-	-	-	-	
	3/8/2017	801	10.41	15.81	14.22	-	11.85	1.59	-	2.37	-	-	-	-	
	3/13/2017	822	0.75	15.81	14.2	-	11.83	1.61	-	2.37	-	-	-	-	
	3/20/2017	831	5.63	15.81	14.07	-	11.7	1.74	-	2.37	-	-	-	-	
	4/3/2017	806	5.92	15.81	13.1	-	10.73	2.71	-	2.37	-	-	-	-	
	4/10/2017	810	3.45	15.81	13.62	-	11.25	2.19	-	2.37	-	-	-	-	
	4/18/2017	841	4.14	15.81	14.02	-	11.65	1.79	-	2.37	-	-	-	-	
	4/25/2017	844	6.81	15.81	14.00	-	11.63	1.81	-	2.37	-	-	-	-	
	5/1/2017	917	-0.52	15.81	13.33	-	10.96	2.48	-	2.37	-	-	-	-	
	5/15/2017	751	1.71	15.81	13.38	-	11.01	2.43	-	2.37	-	-	-	-	
	5/30/2017	801	1.71	15.81	13.02	-	10.65	2.79	-	2.37	-	-	-	-	
	6/5/2017	1155	6.77	15.81	13.87	-	11.5	1.94	-	2.37	-	-	-	-	
	6/13/2017	800	0.74	15.81	13.85	-	11.48	1.96	-	2.37	-	-	-	-	
	6/19/2017	832	9	15.81	14.10	-	11.73	1.71	-	2.37	-	-	-	-	
	10/6/2017	803	2.41	15.81	13.97	-	11.6	1.84	-	2.37	-	-	-	-	

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MW-402	1/3/2017	1310	8.81	16.92	15.51	-	13.21	1.41	-	2.3	-	-	-	-	
	1/17/2017	831	0.32	16.92	15.30	-	13	1.62	-	2.3	-	-	-	-	
	1/23/2017	816	9.09	16.92	15.26	-	12.96	1.66	-	2.3	-	-	-	-	
	1/30/2017	759	1.57	16.92	15.01	-	12.71	1.91	-	2.3	-	-	-	-	
	2/6/2017	744	10.07	16.92	15.88	-	13.58	1.04	-	2.3	-	-	-	-	
	2/14/2017	803	0.29	16.92	14.3	-	12	2.62	-	2.3	-	-	-	-	
	2/20/2017	810	7.3	16.92	14.91	-	12.61	2.01	-	2.3	-	-	-	-	
	2/27/2017	734	1.2	16.92	15.16	-	12.86	1.76	-	2.3	-	-	-	-	
	3/8/2017	747	10.51	16.92	15.2	-	12.9	1.72	-	2.3	-	-	-	-	
	3/13/2017	807	0.47	16.92	15.37	-	13.07	1.55	-	2.3	-	-	-	-	
	3/20/2017	812	6.15	16.92	14.91	-	12.61	2.01	-	2.3	-	-	-	-	
	4/3/2017	753	6.49	16.92	13.79	-	11.49	3.13	-	2.3	-	-	-	-	
	4/10/2017	749	2.71	16.92	14.83	-	12.53	2.09	-	2.3	-	-	-	-	
	4/18/2017	828	4.51	16.92	14.94	-	12.64	1.98	-	2.3	-	-	-	-	
	4/25/2017	829	6.14	16.92	15.2	-	12.9	1.72	-	2.3	-	-	-	-	
	5/1/2017	900	0.02	16.92	14.32	-	12.02	2.60	-	2.3	-	-	-	-	
	5/15/2017	738	2.08	16.92	14.3	-	12	2.62	-	2.3	-	-	-	-	
	5/30/2017	735	2.97	16.92	13.85	-	11.55	3.07	-	2.3	-	-	-	-	
	6/5/2017	1335	3.13	16.92	14.75	-	12.45	2.17	-	2.3	-	-	-	-	
	6/13/2017	740	1.18	16.92	14.83	-	12.53	2.09	-	2.3	-	-	-	-	
	6/19/2017	815	9.32	16.92	15.06	-	12.76	1.86	-	2.3	-	-	-	-	
	10/6/2017	740	1.55	16.92	15.14	-	12.84	1.78	-	2.3	-	-	-	-	
MW-403	1/3/2017	1320	9.12	15.33	14.03	-	11.81	1.3	-	2.22	-	-	-	-	
	1/17/2017	833	0.33	15.33	13.76	-	11.54	1.57	-	2.22	-	-	-	-	
	1/23/2017	818	9.08	15.33	13.68	-	11.46	1.65	-	2.22	-	-	-	-	
	1/30/2017	754	1.4	15.33	13.46	-	11.24	1.87	-	2.22	-	-	-	-	
	2/6/2017	743	10.06	15.33	13.47	-	11.25	1.86	-	2.22	-	-	-	-	
	2/14/2017	800	0.24	15.33	12.75	-	10.53	2.58	-	2.22	-	-	-	-	
	2/20/2017	753	7.68	15.33	13.33	-	11.11	2.00	-	2.22	-	-	-	-	
	2/27/2017	732	1.1	15.33	13.63	-	11.41	1.70	-	2.22	-	-	-	-	
	3/8/2017	745	10.52	15.33	13.62	-	11.4	1.71	-	2.22	-	-	-	-	
	3/13/2017	805	0.41	15.33	13.85	-	11.63	1.48	-	2.22	-	-	-	-	
	3/20/2017	811	6.18	15.33	13.28	-	11.06	2.05	-	2.22	-	-	-	-	
	4/3/2017	752	6.53	15.33	12.1	-	9.88	3.23	-	2.22	-	-	-	-	
	4/10/2017	747	2.65	15.33	13.33	-	11.11	2.00	-	2.22	-	-	-	-	
	4/18/2017	825	4.6	15.33	13.32	-	11.1	2.01	-	2.22	-	-	-	-	
	4/25/2017	828	6.09	15.33	13.68	-	11.46	1.65	-	2.22	-	-	-	-	
	5/1/2017	858	0.09	15.33	12.73	-	10.51	2.60	-	2.22	-	-	-	-	
	5/15/2017	736	2.14	15.33	12.69	-	10.47	2.64	-	2.22	-	-	-	-	
	5/30/2017	733	3.07	15.33	12.19	-	9.97	3.14	-	2.22	-	-	-	-	
	6/5/2017	1150	6.92	15.33	13.01	-	10.79	2.32	-	2.22	-	-	-	-	
	6/13/2017	738	1.23	15.33	13.26	-	11.04	2.07	-	2.22	-	-	-	-	
	6/19/2017	813	9.35	15.33	13.46	-	11.24	1.87	-	2.22	-	-	-	-	
	10/6/2017	809	2.65	15.33	13.66	-	11.44	1.67	-	2.22	-	-	-	-	

Table 7
Well Gauging Data Through October 6, 2017
IRA Completion Report
Enbridge
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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-404	1/4/2017	900	0.69	14.2	12.39	12.38	11.25	1.81	12.38	1.14	11.24	0.01	+/- 0.0	-	Interface probe.[5]
	1/17/2017	838	0.3	14.2	12.81	-	11.67	1.39	-	1.14	-	-	-	-	
	1/23/2017	828	8.98	14.2	13.62	-	12.48	0.58	-	1.14	-	-	-	-	
	1/30/2017	757	1.49	14.2	12.56	-	11.42	1.64	-	1.14	-	-	-	-	
	2/6/2017	905	7.62	14.2	12.20	-	11.06	2.00	-	1.14	-	-	-	-	
	2/14/2017	1027	4.6	14.2	12.08	-	10.94	2.12	-	1.14	-	-	-	-	
	2/20/2017	849	6.35	14.2	12.15	-	11.01	2.05	-	1.14	-	-	-	-	
	2/27/2017	822	3.06	14.2	12.73	-	11.59	1.47	-	1.14	-	-	-	-	
	3/8/2017	826	10.07	14.2	12.28	-	11.14	1.92	-	1.14	-	-	-	-	
	3/13/2017	709	-0.03	14.2	12.88	-	11.74	1.32	-	1.14	-	-	-	-	
	3/20/2017	853	5.01	14.2	12.2	-	11.06	2.00	-	1.14	-	-	-	-	
	4/3/2017	836	4.62	14.2	11.2	-	10.06	3.00	-	1.14	-	-	-	-	
	4/10/2017	832	4.32	14.2	12.35	-	11.21	1.85	-	1.14	-	-	-	-	
	4/18/2017	924	2.95	14.2	12.38	-	11.24	1.82	-	1.14	-	-	-	-	
	4/25/2017	911	7.98	14.2	12.76	-	11.62	1.44	-	1.14	-	-	-	-	
	5/1/2017	945	-1.09	14.2	11.88	-	10.74	2.32	-	1.14	-	-	-	-	
	5/15/2017	821	0.97	14.2	11.91	-	10.77	2.29	-	1.14	-	-	-	-	
	5/30/2017	835	0.24	14.2	11.5	-	10.36	2.70	-	1.14	-	-	-	-	
	6/6/2017	840	7.79	14.2	12.7	-	11.56	1.50	-	1.14	-	-	-	-	
	6/13/2017	830	0.34	14.2	12.35	-	11.21	1.85	-	1.14	-	-	-	-	
	6/19/2017	932	7.34	14.2	12.15	-	11.01	2.05	-	1.14	-	-	-	-	
	10/6/2017	1128	10.45	14.2	12.7	-	11.56	1.50	-	1.14	-	-	-	-	
MW-405	1/3/2017	1330	9.36	16.19	14.7	-	12.38	1.49	-	2.32	-	-	-	-	
	1/17/2017	835	0.31	16.19	14.50	-	12.18	1.69	-	2.32	-	-	-	-	
	1/23/2017	843	8.8	16.19	14.59	-	12.27	1.6	-	2.32	-	-	-	-	
	1/30/2017	801	1.62	16.19	14.2	-	11.88	1.99	-	2.32	-	-	-	-	
	2/6/2017	747	10.06	16.19	14.44	-	12.12	1.75	-	2.32	-	-	-	-	
	2/14/2017	804	0.3	16.19	13.63	-	11.31	2.56	-	2.32	-	-	-	-	
	2/20/2017	755	7.63	16.19	14.26	-	11.94	1.93	-	2.32	-	-	-	-	
	2/27/2017	736	1.26	16.19	14.29	-	11.97	1.90	-	2.32	-	-	-	-	
	3/8/2017	749	10.5	16.19	14.57	-	12.25	1.62	-	2.32	-	-	-	-	
	3/13/2017	810	0.52	16.19	14.66	-	12.34	1.53	-	2.32	-	-	-	-	
	3/20/2017	814	6.09	16.19	14.42	-	12.1	1.77	-	2.32	-	-	-	-	
	4/3/2017	755	6.39	16.19	13.26	-	10.94	2.93	-	2.32	-	-	-	-	
	4/10/2017	751	2.77	16.19	13.84	-	11.52	2.35	-	2.32	-	-	-	-	
	4/18/2017	829	2.8	16.19	14.31	-	11.99	1.88	-	2.32	-	-	-	-	
	4/25/2017	831	6.23	16.19	14.43	-	12.11	1.76	-	2.32	-	-	-	-	
	5/1/2017	901	-0.01	16.19	13.71	-	11.39	2.48	-	2.32	-	-	-	-	
	5/15/2017	739	2.05	16.19	13.81	-	11.49	2.38	-	2.32	-	-	-	-	
	5/30/2017	739	2.77	16.19	13.37	-	11.05	2.82	-	2.32	-	-	-	-	
	6/6/2017	1025	9.07	16.19	14.15	-	11.83	2.04	-	2.32	-	-	-	-	
	6/13/2017	743	0.29	16.19	14.16	-	11.84	2.03	-	2.32	-	-	-	-	
	6/19/2017	817	9.29	16.19	14.36	-	12.04	1.83	-	2.32	-	-	-	-	
	10/6/2017	744	1.7	16.19	14.45	-	12.13	1.74	-	2.32	-	-	-	-	

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-406	1/4/2017	920	0.5	15.58	13.67	13.64	11.43	1.91	13.64	2.24	11.4	0.03	+/- 0.0	-	Interface probe.[5]
	1/17/2017	901	0.39	15.58	14.1	13.94	11.86	1.48	13.94	2.24	11.7	0.16	+ 0 /- 0.1	-	Interface probe.[5]
	1/23/2017	910	8.38	15.58	14.04	13.99	11.8	1.54	13.99	2.24	11.75	0.05	+/- 0.0	-	Interface probe.[5]
	1/30/2017	900	3.82	15.58	13.73	13.68	11.49	1.85	13.68	2.24	11.44	0.05	+/- 0.0	-	Interface probe.[5]
	2/6/2017	940	10.12	15.58	13.89	13.84	11.65	1.69	13.84	2.24	11.6	0.05	+/- 0.0	-	Interface probe.[5]
	2/14/2017	955	3.42	15.58	13.25	13.21	11.01	2.33	13.19	2.24	10.95	0.04	+ 0 / 0.1	-	Interface probe.[5]
	2/20/2017	856	6.19	15.58	13.66	13.59	11.42	1.92	13.59	2.24	11.35	0.07	+/- 0.0	-	Interface probe.[5]
	2/27/2017	839	3.74	15.58	13.72	13.71	11.48	1.86	13.71	2.24	11.47	0.01	+/- 0.0	-	interface probe.[5]
	3/8/2017	847	9.66	15.58	13.91	13.88	11.67	1.67	13.88	2.24	11.64	0.03	+/- 0.0	-	interface probe.[5]
	3/13/2017	945	3.19	15.58	14.11	14.03	11.87	1.47	14.03	2.24	11.79	0.08	+ 0 /- 0.1	-	Interface probe.[5]
	3/20/2017	921	4.22	15.58	13.86	13.83	11.62	1.72	13.83	2.24	11.59	0.03	+ 0 /- 0.1	-	Interface probe.[5]
	4/3/2017	911	3.1	15.58	12.85	12.80	10.61	2.73	12.8	2.24	10.56	0.05	+ 0 /- 0.1	-	Interface probe.[5]
	4/10/2017	855	5.3	15.58	13.21	13.19	10.97	2.37	13.19	2.24	10.95	0.02	+ 0 /- 0.03	-	Interface probe.[5]
	4/18/2017	930	2.79	15.58	13.9	13.80	11.66	1.68	13.8	2.24	11.56	0.1	+ 0 /- 0.03	-	interface probe.[5] New sock installed.
	4/25/2017	923	8.46	15.58	13.9	-	11.66	1.68	-	2.24	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/1/2017	1002	-1.23	15.58	13.22	13.22	10.98	2.36	13.22	2.24	10.98	0	+ 0 /- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/15/2017	910	0.44	15.58	13.35	13.35	11.11	2.23	13.35	2.24	11.11	0	+ 0 /- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/30/2017	932	-1.15	15.58	14.01	14.00	11.77	1.57	14	2.24	11.76	0.01	+ 0 /- 0.03	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	6/6/2017	1107	8.75	15.58	13.51	13.50	11.27	2.07	13.5	2.24	11.26	0.01	+ 0 /- 0.01	-	interface probe.[5] Sock removed, well gauged, and no sock installed.
	6/13/2017	905	0.4	15.58	13.63	13.62	11.39	1.96	13.62	2.24	11.38	0.01	+ 0 /- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	6/19/2017	1000	6.41	15.58	13.76	13.75	11.52	1.82	13.75	2.24	11.51	0.01	+ 0 /- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	10/6/2017	840	3.9	15.58	14.2	13.90	11.96	1.68	13.89	2.24	11.65	0.31	+ 0 /- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
MW-407	1/4/2017	1000	0.67	15.32	13.48	13.45	11.34	1.84	13.45	2.14	11.31	0.03	+/- 0.0	-	Interface probe.[5]
	1/17/2017	910	0.49	15.32	13.77	13.72	11.63	1.55	13.72	2.14	11.58	0.05	+/- 0.0	-	Interface probe.[5]
	1/23/2017	846	8.76	15.32	13.81	13.79	11.67	1.51	13.79	2.14	11.65	0.02	+/- 0.0	-	Interface probe.[5]
	1/30/2017	918	4.53	15.32	13.42	13.35	11.28	1.90	13.35	2.14	11.21	0.07	+/- 0.0	-	interface probe/water seeking paste.[5]
	2/6/2017	952	5.8	15.32	13.53	13.47	11.39	1.79	13.47	2.14	11.33	0.06	+/- 0.0	-	Interface probe.[5]
	2/14/2017	939	2.83	15.32	12.96	12.93	10.82	2.36	12.93	2.14	10.79	0.03	+/- 0.0	-	Interface probe.[5]
	2/20/2027	906	5.91	15.32	13.37	13.36	11.23	1.95	13.36	2.14	11.22	0.01	+/- 0.0	-	Interface probe.[5]
	2/27/2017	905	4.82	15.32	13.51	13.48	11.37	1.81	13.48	2.14	11.34	0.03	+ 0 / 0.1	-	interface probe.[5]
	3/8/2017	900	9.35	15.32	13.66	13.64	11.52	1.66	13.64	2.14	11.5	0.02	+ 0 / 0.1	-	interface probe.[5]
	3/13/2017	1005	3.92	15.32	13.83	13.81	11.69	1.49	13.81	2.14	11.67	0.02	+ 0 / 0.1	-	interface probe.[5]
	3/20/2017	932	3.9	15.32	13.77	13.59	11.63	1.55	13.59	2.14	11.45	0.18	+ 0 / 0.1	-	interface probe.[5]
	4/3/2017	927	2.39	15.32	12.52	12.48	10.38	2.80	12.48	2.14	10.34	0.04	+ 0 / 0.1	-	interface probe.[5]
	4/10/2017	915	6.17	15.32	12.96	12.93	10.82	2.36	12.93	2.14	10.79	0.03	+ 0 /- 0.03	-	interface probe.[5]
	4/18/2017	945	2.38	15.32	13.59	13.57	11.45	1.73	13.57	2.14	11.43	0.02	+ 0 /- 0.03	-	interface probe.[5] New sock installed.
	4/25/2017	937	8.99	15.32	13.65	-	11.51	1.67	-	2.14	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/1/2017	1029	-1.12	15.32	12.92	12.92	10.78	2.40	12.92	2.14	10.78	0	+ 0 /- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/15/2017	922	0.47	15.32	13.15	-	11.01	2.17	-	2.14	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/30/2017	1003	-1.17	15.32	12.75	-	10.61	2.57	-	2.14	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	6/6/2017	1128	8.45	15.32	13.26	-	11.12	2.06	-	2.14	-	-	-	-	interface probe.[5] Well gauged, and no sock installed.
	6/13/2017	915	0.52	15.32	13.4	13.39	11.26	1.93	13.39	2.14	11.25	0.01	+ 0 /- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	6/19/2017	1021	5.69	15.32	13.5	13.49	11.36	1.82	13.49	2.14	11.35	0.01	+ 0 /- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	10/6/2017	855	4.52	15.32	13.95	13.72	11.81	1.60	13.71	2.14	11.57	0.24	+ 0 /- 0.01	-	interface probe.[5] Well gauged, and no sock installed.

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-408	1/4/2017	1020	1.03	15.34	13.38	-	11.08	1.96	-	2.3	-	-	-	-	
	1/17/2017	759	0.72	15.34	13.61	-	11.31	1.73	-	2.3	-	-	-	-	
	1/23/2017	754	9.2	15.34	13.74	-	11.44	1.6	-	2.3	-	-	-	-	
	1/30/2017	805	1.77	15.34	13.26	-	10.96	2.08	-	2.3	-	-	-	-	
	2/6/2017	749	9.97	15.34	13.52	-	11.22	1.82	-	2.3	-	-	-	-	
	2/14/2017	807	0.34	15.34	12.81	-	10.51	2.53	-	2.3	-	-	-	-	
	2/20/2017	757	7.7	15.34	13.32	-	11.02	2.02	-	2.3	-	-	-	-	
	2/27/2017	727	0.95	15.34	13.34	-	11.04	2.00	-	2.3	-	-	-	-	
	3/8/2017	751	10.49	15.34	13.69	-	11.39	1.65	-	2.3	-	-	-	-	
	3/13/2017	812	0.56	15.34	13.75	-	11.45	1.59	-	2.3	-	-	-	-	
	3/20/2017	822	5.88	15.34	13.57	-	11.27	1.77	-	2.3	-	-	-	-	
	4/3/2017	756	6.35	15.34	12.46	-	10.16	2.88	-	2.3	-	-	-	-	
	4/10/2017	754	2.89	15.34	12.87	-	10.57	2.47	-	2.3	-	-	-	-	
	4/18/2017	831	4.43	15.34	13.46	-	11.16	1.88	-	2.3	-	-	-	-	
	4/25/2017	833	6.32	15.34	13.52	-	11.22	1.82	-	2.3	-	-	-	-	
	5/1/2017	903	-0.08	15.34	12.92	-	10.62	2.42	-	2.3	-	-	-	-	
	5/15/2017	740	2.02	15.34	12.98	-	10.68	2.36	-	2.3	-	-	-	-	
	5/30/2017	742	2.63	15.34	12.64	-	10.34	2.70	-	2.3	-	-	-	-	
	6/6/2017	1205	7.74	15.34	13.15	-	10.85	2.19	-	2.3	-	-	-	-	
	6/13/2017	746	1.04	15.34	13.33	-	11.03	2.01	-	2.3	-	-	-	-	
	6/19/2017	819	9.25	15.34	13.48	-	11.18	1.86	-	2.3	-	-	-	-	
	10/6/2017	746	1.77	15.34	13.61	-	11.31	1.73	-	2.3	-	-	-	-	
MW-409	1/3/2017	1350	9.8	15.13	13.44	-	11.15	1.69	-	2.29	-	-	-	-	
	1/17/2017	755	0.82	15.13	13.33	-	11.04	1.8	-	2.29	-	-	-	-	
	1/23/2017	757	9.19	15.13	13.46	-	11.17	1.67	-	2.29	-	-	-	-	
	1/30/2017	808	1.85	15.13	13.02	-	10.73	2.11	-	2.29	-	-	-	-	
	2/6/2017	806	9.53	15.13	13.3	-	11.01	1.83	-	2.29	-	-	-	-	
	2/14/2017	810	0.38	15.13	12.55	-	10.26	2.58	-	2.29	-	-	-	-	
	2/20/2017	801	7.5	15.13	13.05	-	10.76	2.08	-	2.29	-	-	-	-	
	2/27/2017	741	1.45	15.13	13.07	-	10.78	2.06	-	2.29	-	-	-	-	
	3/8/2017	753	10.47	15.13	13.4	-	11.11	1.73	-	2.29	-	-	-	-	
	3/13/2017	816	0.64	15.13	13.47	-	11.18	1.66	-	2.29	-	-	-	-	
	3/20/2017	825	5.79	15.13	13.31	-	11.02	1.82	-	2.29	-	-	-	-	
	4/3/2017	800	6.18	15.13	12.27	-	9.98	2.86	-	2.29	-	-	-	-	
	4/10/2017	800	3.1	15.13	12.67	-	10.38	2.46	-	2.29	-	-	-	-	
	4/18/2017	834	4.34	15.13	13.2	-	10.91	1.93	-	2.29	-	-	-	-	
	4/25/2017	835	6.41	15.13	13.23	-	10.94	1.90	-	2.29	-	-	-	-	
	5/1/2017	908	-0.25	15.13	12.66	-	10.37	2.47	-	2.29	-	-	-	-	
	5/15/2017	744	1.91	15.13	12.78	-	10.49	2.35	-	2.29	-	-	-	-	
	5/30/2017	746	2.43	15.13	12.37	-	10.08	2.76	-	2.29	-	-	-	-	
	6/6/2017	1030	9.05	15.13	12.15	-	9.86	2.99	-	2.29	-	-	-	-	
	6/13/2017	753	0.88	15.13	13.06	-	10.77	2.07	-	2.29	-	-	-	-	
	6/19/2017	823	9.18	15.13	13.23	-	10.94	1.90	-	2.29	-	-	-	-	
	10/6/2017	751	1.96	15.13	13.34	-	11.05	1.79	-	2.29	-	-	-	-	

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-410	1/4/2017	1500	9.9	14.74	13.1	12.86	10.81	1.64	12.85	2.29	10.56	0.25	+ 0 ft /- 0.15	30	interface probe/water seeking paste.[5]
	1/17/2017	1255	7.59	14.74	13.44	13.29	11.15	1.3	13.29	2.29	11.00	0.15	+/- 0.05	220	interface probe/water seeking paste.[5]
	1/23/2017	1030	6.52	14.74	13.18	13.10	10.89	1.56	13.1	2.29	10.81	0.08	- 0 ft /- 0.1	170	Interface probe after removing 170 ml product.[5]
	1/30/2017	1114	8.98	14.74	13.04	12.96	10.75	1.70	12.99	2.29	10.7	0.08	+/- 0.0	-	interface probe/water seeking paste.[5]
	2/6/2017	1040	3.78	14.74	13.52	12.94	11.23	1.22	12.93	2.29	10.64	0.59	+/- 0.01	-	interface probe.[5]
	2/14/2017	1055	5.8	14.74	12.26	12.24	9.97	2.48	12.24	2.29	9.95	0.02	+/- 0.05	-	interface probe.[5]
	2/20/2017	1017	3.87	14.74	13.36	12.81	11.07	1.38	12.8	2.29	10.51	0.56	+/- 0.05	-	interface probe.[5]
	2/27/2017	950	6.74	14.74	12.97	12.95	10.68	1.77	12.95	2.29	10.66	0.02	+/- 0.0	-	interface probe.[5]
	3/8/2017	945	8.02	14.74	12.95	12.94	10.66	1.79	12.94	2.29	10.65	0.01	+/- 0.0	-	interface probe.[5]
	3/13/2017	1035	5.17	14.74	13.3	13.12	11.01	1.44	13.12	2.29	10.83	0.18	+/- 0.05	-	interface probe.[5]
	3/20/2017	1012	2.79	14.74	13.29	13.05	11	1.45	13.04	2.29	10.75	0.25	+/- 0.01	-	interface probe.[5]
	4/3/2017	1040	-0.19	14.74	12.29	12.05	10	2.45	12.04	2.29	9.75	0.25	+/- 0.01	-	interface probe/water seeking paste.[5]
	4/10/2017	930	6.8	14.74	12.55	12.51	10.26	2.19	12.51	2.29	10.22	0.04	+/- 0.0	-	interface probe.[5]
	4/18/2017	1000	2.01	14.74	13.01	13.00	10.72	1.73	13.00	2.29	10.71	0.01	+/- 0.01	-	interface probe.[5] New sock installed.
	4/25/2017	943	9.2	14.74	13.05	-	10.76	1.69	-	2.29	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/1/2017	1050	-0.78	14.74	12.34	-	10.05	2.40	-	2.29	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/15/2017	1000	0.98	14.74	12.52	-	10.23	2.22	-	2.29	-	-	-	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/30/2017	1033	-0.74	14.74	12.1	12.09	9.81	2.64	12.09	2.29	9.8	0.01	+/- 0.05	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	6/6/2017	1145	8.15	14.74	12.65	12.65	10.36	2.09	-	2.29	-	0	+/- 0.02	-	interface probe.[5] Well gauged, and no sock installed.
	6/13/2017	930	0.77	14.74	12.86	12.83	10.57	1.91	12.83	2.29	10.54	0.03	+/- 0.02	-	interface probe.[5] Well gauged, and no sock installed.
	6/19/2017	1033	5.57	14.74	13.06	13.05	10.77	1.68	13.05	2.29	10.76	0.01	+/- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	10/6/2017	947	6.77	14.74	13.58	13.11	11.29	1.63	13.10	2.29	10.81	0.48	+/- 0.01	-	interface probe/water seeking paste.[5] No sock installed.
MW-411	1/3/2017	1200	6.49	14.94	13.37	-	10.96	1.57	-	2.41	-	-	-	-	
	1/17/2017	802	0.68	14.94	13.26	-	10.85	1.68	-	2.41	-	-	-	-	
	1/23/2017	800	9.19	14.94	13.38	-	10.97	1.56	-	2.41	-	-	-	-	
	1/30/2017	816	2.15	14.94	13.09	-	10.68	1.85	-	2.41	-	-	-	-	
	2/6/2017	800	9.68	14.94	13.08	-	10.67	1.86	-	2.41	-	-	-	-	
	2/14/2017	814	0.49	14.94	12.25	-	9.84	2.69	-	2.41	-	-	-	-	
	2/20/2017	805	7.42	14.94	12.99	-	10.58	1.95	-	2.41	-	-	-	-	
	2/27/2017	745	1.59	14.94	13.19	-	10.78	1.75	-	2.41	-	-	-	-	
	3/8/2017	757	10.44	14.94	13.23	-	10.82	1.71	-	2.41	-	-	-	-	
	3/13/2017	821	0.75	14.94	13.42	-	11.01	1.52	-	2.41	-	-	-	-	
	3/20/2017	830	5.65	14.94	12.94	-	10.53	2.00	-	2.41	-	-	-	-	
	4/3/2017	801	6.14	14.94	12.05	-	9.64	2.89	-	2.41	-	-	-	-	
	4/10/2017	807	3.34	14.94	12.82	-	10.41	2.12	-	2.41	-	-	-	-	
	4/18/2017	839	4.2	14.94	12.96	-	10.55	1.98	-	2.41	-	-	-	-	
	4/25/2017	841	6.67	14.94	13.21	-	10.8	1.73	-	2.41	-	-	-	-	
	5/1/2017	913	-0.4	14.94	12.41	-	10	2.53	-	2.41	-	-	-	-	
	5/15/2017	748	1.79	14.94	12.37	-	9.96	2.57	-	2.41	-	-	-	-	
	5/30/2017	1018	-1	14.94	12.75	-	10.34	2.19	-	2.41	-	-	-	-	
	6/7/2017	1120	8.95	14.94	12.83	-	10.42	2.11	-	2.41	-	-	-	-	
	6/13/2017	755	0.84	14.94	12.87	-	10.46	2.07	-	2.41	-	-	-	-	
	6/19/2017	829	9.06	14.94	13.07	-	10.66	1.87	-	2.41	-	-	-	-	
	10/6/2017	759	2.26	14.94	13.14	-	10.73	1.80	-	2.41	-	-	-	-	

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MW-412	1/4/2017	1100	2.2	15.25	13.15	-	11.51	2.1	-	1.64	-	-	-	-	
	1/17/2017	745	1.05	15.25	13.55	-	11.91	1.7	-	1.64	-	-	-	-	
	1/23/2017	822	9.05	15.25	13.61	-	11.97	1.64	-	1.64	-	-	-	-	
	1/30/2017	811	1.97	15.25	13.32	-	11.68	1.93	-	1.64	-	-	-	-	
	2/6/2017	756	9.7	15.25	13.38	-	11.74	1.87	-	1.64	-	-	-	-	
	2/14/2017	812	0.44	15.25	12.54	-	10.9	2.71	-	1.64	-	-	-	-	
	2/20/2017	803	7.46	15.25	13.3	-	11.66	1.95	-	1.64	-	-	-	-	
	2/27/2017	742	1.48	15.25	13.4	-	11.76	1.85	-	1.64	-	-	-	-	
	3/8/2017	754	10.47	15.24	13.53	-	11.89	1.71	-	1.64	-	-	-	-	
	3/13/2017	818	0.68	15.24	13.7	-	12.06	1.54	-	1.64	-	-	-	-	
	3/20/2017	826	5.76	15.24	13.34	-	11.7	1.90	-	1.64	-	-	-	-	
	4/3/2017	803	6.06	15.24	12.32	-	10.68	2.92	-	1.64	-	-	-	-	
	4/10/2017	802	3.17	15.24	13.00	-	11.36	2.24	-	1.64	-	-	-	-	
	4/18/2017	836	4.29	15.24	13.32	-	11.68	1.92	-	1.64	-	-	-	-	
	4/25/2017	837	6.5	15.24	13.47	-	11.83	1.77	-	1.64	-	-	-	-	
	5/1/2017	909	-0.28	15.24	12.75	-	11.11	2.49	-	1.64	-	-	-	-	
	5/15/2017	745	1.88	15.24	12.75	-	11.11	2.49	-	1.64	-	-	-	-	
	5/30/2017	749	2.28	15.24	12.4	-	10.76	2.84	-	1.64	-	-	-	-	
	6/6/2017	1320	5.57	15.24	13.16	-	11.52	2.08	-	1.64	-	-	-	-	
	6/13/2017	1036	2.57	15.24	13.44	-	11.8	1.80	-	1.64	-	-	-	-	
	6/19/2017	825	9.14	15.24	13.07	-	11.43	2.17	-	1.64	-	-	-	-	
	10/6/2017	754	2.07	15.24	13.45	-	11.81	1.79	-	1.64	-	-	-	-	
MW-413	1/4/2017	1040	1.5	15.45	13.32	-	11.61	2.13	-	1.71	-	-	-	-	
	1/17/2017	750	0.94	15.45	13.80	-	12.09	1.65	-	1.71	-	-	-	-	
	1/23/2017	824	9.03	15.45	13.85	-	12.14	1.6	-	1.71	-	-	-	-	
	1/30/2017	813	2.03	15.45	13.56	-	11.85	1.89	-	1.71	-	-	-	-	
	2/6/2017	758	9.73	15.45	13.63	-	11.92	1.82	-	1.71	-	-	-	-	
	2/14/2017	813	0.47	15.45	12.87	-	11.16	2.58	-	1.71	-	-	-	-	
	2/20/2017	804	7.44	15.45	13.53	-	11.82	1.92	-	1.71	-	-	-	-	
	2/27/2017	743	1.52	15.45	13.67	-	11.96	1.78	-	1.71	-	-	-	-	
	3/8/2017	756	10.45	15.45	13.74	-	12.03	1.71	-	1.71	-	-	-	-	
	3/13/2017	820	0.72	15.45	13.94	-	12.23	1.51	-	1.71	-	-	-	-	
	3/20/2017	828	5.71	15.45	13.52	-	11.81	1.93	-	1.71	-	-	-	-	
	4/3/2017	805	5.98	15.45	14.53	-	12.82	0.92	-	1.71	-	-	-	-	
	4/10/2017	804	3.23	15.45	13.37	-	11.66	2.08	-	1.71	-	-	-	-	
	4/18/2017	837	4.26	15.45	13.52	-	11.81	1.93	-	1.71	-	-	-	-	
	4/25/2017	839	6.58	15.45	13.78	-	12.07	1.67	-	1.71	-	-	-	-	
	5/1/2017	911	-0.34	15.45	12.97	-	11.26	2.48	-	1.71	-	-	-	-	
	5/15/2017	747	1.82	15.45	12.96	-	11.25	2.49	-	1.71	-	-	-	-	
	5/30/2017	755	1.99	15.45	12.67	-	10.96	2.78	-	1.71	-	-	-	-	
	6/6/2017	1240	6.84	15.45	12.82	-	11.11	2.63	-	1.71	-	-	-	-	
	6/13/2017	1039	2.67	15.45	13.65	-	11.94	1.80	-	1.71	-	-	-	-	
	6/19/2017	828	9.08	15.45	13.61	-	11.9	1.84	-	1.71	-	-	-	-	
	10/6/2017	757	2.18	15.45	13.72	-	12.01	1.73	-	1.71	-	-	-	-	

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Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-414	1/4/2017	940	0.49	16.29	14.39	14.26	12.28	1.9	14.26	2.11	12.15	0.13	+/- 0.03	10	Interface probe.[5]
	1/17/2017	1032	2.37	16.29	13.99	13.79	11.88	2.3	13.79	2.11	11.68	0.2	+/- 0.06	40	Interface probe.[5]
	1/23/2017	930	7.98	16.29	14.9	14.55	12.79	1.39	14.54	2.11	12.43	0.36	+ 0 /- 0.10	180	Interface probe.[5]
	1/30/2017	1005	6.4	16.29	14.33	14.31	12.22	1.96	14.31	2.11	12.2	0.02	+ 0 /- 0.10	-	Interface probe.[5]
	2/6/2017	925	6.91	16.29	14.9	14.40	12.79	1.39	14.39	2.11	12.28	0.51	+/- 0.0	-	Interface probe.[5]
	2/14/2017	1005	3.8	16.29	14.34	13.75	12.23	1.95	13.74	2.11	11.63	0.6	+/- 0.0	-	Interface probe.[5]
	2/20/2017	920	5.51	16.29	14.94	14.16	12.83	1.35	14.14	2.11	12.03	0.8	+/- 0.05	-	Interface probe.[5]
	2/27/2017	825	3.17	16.29	15.06	14.31	12.95	1.23	14.29	2.11	12.18	0.77	+/- 0.0	-	Interface probe.[5]
	3/8/2017	835	9.92	16.29	15.42	14.43	13.31	0.87	14.43	2.11	12.32	1.01	+/- 0.03	-	Interface probe.[5]
	3/13/2017	912	2.1	16.29	15.55	14.63	13.44	0.74	14.61	2.11	12.5	0.94	+/- 0.03	-	Interface probe.[5]
	3/20/2017	905	4.67	16.29	15.17	14.39	13.06	1.12	14.37	2.11	12.26	0.8	+/- 0.03	-	Interface probe.[5]
	4/3/2017	855	3.79	16.29	14.18	13.29	12.07	2.11	13.27	2.11	11.16	0.91	+/- 0.01	-	Interface probe.[5]
	4/10/2017	840	4.65	16.29	14.75	13.80	12.64	1.54	13.78	2.11	11.67	0.97	+/- 0.01	-	interface probe.[5]
	4/17/147	747	4.22	16.29	15.64	14.28	13.53	0.65	14.25	2.11	12.14	1.39	+/- 0.01	3,868	interface probe.[5] Gauged prior to skimming test.
	4/18/2017	1044	1.15	16.29	14.43	14.35	12.32	1.86	14.35	2.11	12.24	0.08	+/- 0.03	177	interface probe.[5] Gauged prior to skimming. Product removed on 4/19 and 4/25.
	4/25/2017	1007	9.92	16.29	14.55	14.52	12.44	1.74	14.52	2.11	14.52	0.03	+/- 0.01	-	interface probe.[5] Gauged after skimming.
	5/1/2017	736	3.76	16.29	13.74	13.73	11.63	2.55	13.73	2.11	11.62	0.01	+/- 0.01	148	interface probe.[5] Gauged before skimming.
	5/1/2017	1130	0.29	16.29	13.82	13.82	11.71	2.47	13.82	2.11	11.71	0.00	+/- 0.01	-	interface probe.[5] Gauged after skimming test and before new sock installed.
	5/15/2017	823	0.93	16.29	13.95	13.94	11.84	2.34	13.94	2.11	11.83	0.01	+/- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	5/30/2017	905	-0.7	16.29	14.51	14.50	12.4	1.78	14.50	2.11	12.39	0.01	+/- 0.01	-	interface probe.[5] Sock removed, well gauged, and new sock installed.
	6/6/2017	1040	9	16.29	14.09	14.09	11.98	2.20	14.09	2.11	11.98	0.00	+/- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	6/13/2017	848	0.3	16.29	14.24	14.22	12.13	2.07	14.22	2.11	12.11	0.02	+/- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	6/19/2017	942	7.02	16.29	14.41	14.35	12.3	1.88	14.35	2.11	12.24	0.06	+/- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
	10/6/2017	828	3.4	16.29	15.52	14.50	13.41	1.79	14.48	2.11	12.37	1.04	+/- 0.01	-	interface probe.[5] Well gauged, and no sock installed.
MW-415	1/4/2017	840	0.88	16.74	14.74	14.73	12.43	2	14.73	2.31	12.42	0.01	+/- 0.0	-	Interface probe.[5]
	1/17/2017	841	0.29	16.74	15.17	15.14	12.86	1.57	15.14	2.31	12.83	0.03	+ .05 /- 0.0	-	Interface probe.[5]
	1/23/2017	833	8.93	16.74	15.1	-	12.79	1.64	-	2.31	-	-	-	-	
	1/30/2017	852	3.54	16.74	14.84	-	12.53	1.90	-	2.31	-	-	-	-	
	2/6/2017	850	8.16	16.74	14.74	14.71	12.43	2.00	14.71	2.31	12.40	0.03	+/- 0.0	-	Interface probe.[5]
	2/14/2017	1025	4.56	16.74	14.22	-	11.91	2.52	-	2.31	-	-	-	-	
	2/20/2017	847	6.41	16.74	14.79	-	12.48	1.95	-	2.31	-	-	-	-	
	2/27/2017	815	2.76	16.74	14.94	14.86	12.63	1.80	14.86	2.31	12.55	0.08	+/- 0.0	-	Interface probe.[5]
	3/8/2017	828	10.04	16.74	14.84	-	12.53	1.90	-	2.31	-	-	-	-	
	3/13/2017	902	1.8	16.74	15.22	-	12.91	1.52	-	2.31	-	-	-	-	
	3/20/2017	855	4.95	16.74	14.84	-	12.53	1.90	-	2.31	-	-	-	-	
	4/3/2017	840	4.44	16.74	13.92	-	11.61	2.82	-	2.31	-	-	-	-	
	4/10/2017	835	4.44	16.74	13.38	-	11.07	3.36	-	2.31	-	-	-	-	
	4/18/2017	926	2.89	16.74	14.93	-	12.62	1.81	-	2.31	-	-	-	-	
	4/25/2017	912	8.02	16.74	14.93	-	12.62	1.81	-	2.31	-	-	-	-	
	5/1/2017	948	-1.13	16.74	14.16	-	11.85	2.58	-	2.31	-	-	-	-	
	5/15/2017	818	1.04	16.74	14.28	-	11.97	2.46	-	2.31	-	-	-	-	
	5/30/2017	838	0.13	16.74	14	-	11.69	2.74	-	2.31	-	-	-	-	
	6/6/2017	1140	8.25	16.74	14.56	-	12.25	2.18	-	2.31	-	-	-	-	
	6/13/2017	834	0.32	16.74	14.8	-	12.49	1.94	-	2.31	-	-	-	-	
	6/19/2017	938	7.15	16.74	14.66	-	12.35	2.08	-	2.31	-	-	-	-	
	10/6/2017	1124	10.36	16.74	15.04	-	12.73	1.70	-	2.31	-	-	-	-	

Table 7
Well Gauging Data Through October 6, 2017
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street
Weymouth, Massachusetts

Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-416	1/3/2017	1000	2.06	13.01	11.32	-	11.65	1.69	-	-0.33	-	-	-	-	
	1/17/2017	736	1.3	13.01	11.12	-	11.45	1.89	-	-0.33	-	-	-	-	
	1/23/2017	731	9.18	13.01	11.4	-	11.73	1.61	-	-0.33	-	-	-	-	
	1/30/2017	735	0.86	13.01	11.57	-	11.9	1.44	-	-0.33	-	-	-	-	
	2/6/2017	722	10.44	13.01	11.2	-	11.53	1.81	-	-0.33	-	-	-	-	
	2/14/2017	725	-0.04	13.01	10.09	-	10.42	2.92	-	-0.33	-	-	-	-	
	2/20/2017	733	8.08	13.01	10.98	-	11.31	2.03	-	-0.33	-	-	-	-	
	2/27/2017	715	0.45	13.01	10.95	-	11.28	2.06	-	-0.33	-	-	-	-	
	3/8/2017	730	10.55	13.01	11.31	-	11.64	1.70	-	-0.33	-	-	-	-	
	3/13/2017	728	-0.02	13.01	11.34	-	11.67	1.67	-	-0.33	-	-	-	-	
	3/20/2017	750	6.75	13.01	11.17	-	11.5	1.84	-	-0.33	-	-	-	-	
	4/3/2017	738	7.11	13.01	9.96	-	10.29	3.05	-	-0.33	-	-	-	-	
	4/10/2017	727	2.07	13.01	10.49	-	10.82	2.52	-	-0.33	-	-	-	-	
	4/18/2017	904	3.51	13.01	11.01	-	11.34	2.00	-	-0.33	-	-	-	-	
	4/25/2017	812	4.39	13.01	11.08	-	11.41	1.93	-	-0.33	-	-	-	-	
	5/1/2017	838	0.88	13.01	10.37	-	10.7	2.64	-	-0.33	-	-	-	-	
	5/15/2017	721	2.6	13.01	10.49	-	10.82	2.52	-	-0.33	-	-	-	-	
	5/30/2017	711	4.17	13.01	10.02	-	10.35	2.99	-	-0.33	-	-	-	-	
	6/7/2016	1030	8.87	13.01	10.66	-	10.99	2.35	-	-0.33	-	-	-	-	
	6/13/2017	718	1.79	13.01	10.84	-	11.17	2.17	-	-0.33	-	-	-	-	
	6/19/2017	840	8.82	13.01	11.05	-	11.38	1.96	-	-0.33	-	-	-	-	
	10/6/2017	1143	10.72	13.01	11.24	-	11.57	1.77	-	-0.33	-	-	-	-	

Table 7
Well Gauging Data Through October 6, 2017
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street
Weymouth, Massachusetts

Well	Date	Time	Approximate Tidal Elevation (ft MLLW)[1]	TOR Elevation (ft amsl)	DTW (ft-bTOR)	Corrected[7] DTW (ft-TOR)	DTW (ft-bgs)	Groundwater Elevation (ft amsl)	DTP (ft bTOR)	TOR Stickup (ft)	DTP (ft-bgs)	Product Thickness (ft)	Estimated Product Thickness Accuracy (ft)	Volume of Product Removed After Gauging (ml)	Notes
MW-417	1/3/2017	1010	2.41	12.76	11.05	-	11.56	1.71	-	-0.51	-	-	-	-	
	1/17/2017	732	1.42	12.76	10.87	-	11.38	1.89	-	-0.51	-	-	-	-	
	1/23/2017	728	9.17	12.76	11.08	-	11.59	1.68	-	-0.51	-	-	-	-	
	1/30/2017	727	0.67	12.76	10.66	-	11.17	2.10	-	-0.51	-	-	-	-	
	2/6/2017	717	10.49	12.76	10.91	-	11.42	1.85	-	-0.51	-	-	-	-	
	2/14/2017	735	-0.01	12.76	10.27	-	10.78	2.49	-	-0.51	-	-	-	-	
	2/20/2017	729	8.16	12.76	10.65	-	11.16	2.11	-	-0.51	-	-	-	-	
	2/27/2017	712	0.54	12.76	10.68	-	11.19	2.08	-	-0.51	-	-	-	-	
	3/8/2017	726	10.54	12.76	11	-	11.51	1.76	-	-0.51	-	-	-	-	
	3/13/2017	723	-0.04	12.76	11.09	-	11.6	1.67	-	-0.51	-	-	-	-	
	3/23/2017[6]	940	8.26	12.76	11.16	-	11.67	1.60	-	-0.51	-	-	-	-	
	4/3/2017	735	7.23	12.76	9.72	-	10.23	3.04	-	-0.51	-	-	-	-	
	4/10/2017	718	1.82	12.76	10.6	-	11.11	2.16	-	-0.51	-	-	-	-	
	4/18/2017	849	3.92	12.76	10.76	-	11.27	2.00	-	-0.51	-	-	-	-	
	4/25/2017	802	4.95	12.76	10.84	-	11.35	1.92	-	-0.51	-	-	-	-	
	5/1/2017	832	1.13	12.76	10.19	-	10.7	2.57	-	-0.51	-	-	-	-	
	5/15/2017	718	2.69	12.76	10.29	-	10.8	2.47	-	-0.51	-	-	-	-	
	5/30/2015	704	4.52	12.76	9.89	-	10.4	2.87	-	-0.51	-	-	-	-	
	6/7/2017	1200	8.56	12.76	10.17	-	10.68	2.59	-	-0.51	-	-	-	-	
	6/13/2017	708	2.09	12.76	10.61	-	11.12	2.15	-	-0.51	-	-	-	-	
	6/19/2017	837	8.89	12.76	10.78	-	11.29	1.98	-	-0.51	-	-	-	-	
	10/6/2017	1140	10.68	12.76	10.98	-	11.49	1.78	-	-0.51	-	-	-	-	

Abbreviations:
amsl - above mean sea level (vertical datum is North American Vertical Datum of 1988)
bTOR - depth below TOR
DTW - depth to water
DTP - depth to product
ft-bgs - feet below ground surface
TOR - top or well riser
NM - not measured
MLLW - mean lower low water
Stickup - height between TOR and ground surface

Notes:
1 - Based on tidal charts for -tio-l Oceanic and Atmospheric Administration (NOAA) Weymouth Fore River station 8444788.
2 - Oil coated the interface probe so DTW could not be measured.
3 - Developed MW-206.
4 - Attempted to purge product from the well with a peristaltic pump equipped with 3/8" inside diameter tubing- unsuccessfully as it was too viscous.
5 - Oil absorbant sock not deployed to allow LNAPL thickness to reach equilibrium as suggested in MassDEP LNAPL CSM Policy #WSC-16-450 guideline regarding product equilibrium prior to bail-down test.
6 - Did not gauge on 3/20/17 due to frozen ice pile over well. Gauged before sampling on 3/23/17.
7 - DTW corrected for LNAPL thickness and density using the equation: Corrected DTW = DTW - (oil density * oil thickness). Oil density = 0.9785 g/cc at 50 degrees F. sample from MW-201 (PTS Report Date 1/30/17.

Table 8
Petroleum-Saturated Soil Thickness and Total Petroleum Hydrocarbons Estimates
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Boring ID	Observed Top PCS (ft-bgs)	Observed Bottom PCS (ft-bgs)	PID HS (ppm/v)[1]	Estimated PCS Thickness (ft)[2]	VPH/EPH Sample Depth (ft-bgs)	Calculated TPH (mg/kg)	Observations/Notes
B-105[3]	14	19	-	6	14-17	22,795	Strong petroleum odor, gravel/ sand. 10-14 ft no recovery.
B/MW-201	12	18	54.4	6	6-8	123	Black Historic Fill
					10-12	8,548	Black Historic Fill, staining and odor
B-301	10.5	11.7	20.8	1.2	-	-	Black oil stained f-m sand
B-303	10.5	10.7	20.1	0.2	-	-	Black LNAPL/oily Historic Fill
B-304	10.8	12.5	17.8	1.7	-	-	Oil globules, stained Historic Fill
B-305	11.2	17	49.5	5.8	-	-	LNAPL stained Historic Fill
B-306	11.8	14.8	116	3	-	-	LNAPL stained Historic Fill
B-309	11.5	16.7	47.7	5.2	-	-	LNAPL oil saturated Historic Fill
B-311	11.3	17.3	32.7	6			Fill
B-312	11.2	16.7	40.9	5.5	-	-	Historic Fill
B-313	11.3	14	55.2	2.7	-	-	LNAPL/Oil saturated f-m sand
B-317	11.7	13	97.3	1.3	11.5	ND	Ash and cinders
					13	16,153	LNAPL/Oil saturated Historic Fill
B-318	10.7	11.2	22.1	0.5	-	-	LNAPL/Oily silt and clinkers
B-319	12.5	15	137.8	2.5	-	-	LNAPL/Oil stained sand
B/MW-404	12	12.5	12.3	0.5	11.4	1,151	Black coal dust
					12	62,500	Oily sheen, coal, ash cinders
					16.7	ND	F-m sand
B/MW-406	11.5	15	155	3.5	11.8	30,760	Oil globules/oil stained f-m sand
					12.5	48,625	
					21	ND	F-c sand, mild odors
B/MW-407	10.5	13	30.6	2.5	11.8	53,336	LNAPL/Oil stained f-m sand
					12.8	15,686	Oil stained f-m sand
					17.5	ND	Tan f-c sand
B/MW-410	11.3	12.8	0.0	1.5	11	11,107	Historic Fill with sheen/heavy oil
					12.5	16,670	Historic Fill with heavy oil
					14	72	Black Historic fill
B/MW-411	11.1	15.8	14.1	4.7	11.5	357	Historic Fill with sheen
					14	50,300	Historic Fill with viscous oil
					16	ND	Olive-green, wet fine sand
B/MW-412	11.3	16.3	0.0	5	11.5	35,190	Oily Historic Fill
					13	63,200	Oily Historic Fill
					19	58	Olive-gray fine sand with silt

Table 8
Petroleum-Saturated Soil Thickness and Total Petroleum Hydrocarbons Estimates
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Boring ID	Observed Top PCS (ft-bgs)	Observed Bottom PCS (ft-bgs)	PID HS (ppm/v)[1]	Estimated PCS Thickness (ft)[2]	VPH/EPH Sample Depth (ft-bgs)	Calculated TPH (mg/kg)	Observations/Notes
B/MW-413	11.1	16.6	25	5.5	11	12,980	Black Historic Fill with oil
					14-15	65,700	Oil saturated Historic Fill
					23	35	Silt with clay
B/MW-414	11.4	15	55	3.6	11	501	Black Historic Fill
					14	35,520	Oily, black, f-m sand with silt
					15.5	539	F-c sand, some silt, little f gravel
B/MW-415	11.7	16	30.6	4.3	11.8	18,710	Historic Fill with LNAPL
					12.2	13,890	Historic Fill with LNAPL
					13.4	2,090	Historic Fill (clinkers and ash) oily to 16 ft.

Minimum Estimated PCS Impact Thickness (ft):	0.2
Maximum Estimated PCS Impact Thickness (ft):	6.0
Average Estimated PCS Thickness (ft).	3.4

Abbreviations:
c - coarse grained
EPH - Extractable Petroleum Hydrocarbons
f - fine grained
ft-bgs - feet below ground surface
LNAPL - Light Non-aqueous phase liquid
m - medium grained
mg/kg - milligrams per kilogram
PID HS - Photoionization detector jar headspace
ppmv - parts per million volume
PCS - petroleum-containing soil
TPH - Total Petroleum Hydrocarbons - sum of detected VPH and EPH analytes.
VPH - Volatile Petroleum Hydrocarbons

Notes :
1. Photoionization detector headspace values listed represent highest measured value in depth interval listed.
2. Estimated LNAPL thickness may be larger because of limited soil core recovery.
3. B-105 - LNAPL thickness estimated between 12 and 18 ft bgs (6 ft thickness) based on depth of LNAPL at MW-201.
4. MW-402 - This location was inadvertently included in this table in Status Report #2 as containing "petroleum saturated soils", which is incorrect; only a sheen was observed, so it does not appear on this table.

Table 9
Summary of Remediation Waste Management
IRA Completion Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street
Weymouth, Massachusetts

Start of Generation	Disposal Date	Number of Containers	Volume/ Weight	Receiving Facility	Waste Code
4/12/2016	7/28/2016	1	150 gal.	Clean Harbors Chattanooga, LLC	MA99
		2	400 lbs		MA01
7/28/2016	11/1/2016	1	40 gal.	Clean Harbors Chattanooga, LLC	MA01
		2	400 lbs.	Spring Grove Resource Recover, Inc.	MA01
11/1/2016	12/29/2016	7	385 gal.	Clean Harbors Chattanooga, LLC	MA01
		8	3,000 lbs.	Spring Grove Resource Recover, Inc.	MA01
12/29/2016	3/23/2017	1	55 gal.	Clean Harbors Chattanooga, LLC	MA01
		2	500 lbs.	Spring Grove Resource Recover, Inc.	MA01
3/23/2017	6/19/2017	1	55 lbs.	Clean Harbors Chattanooga, LLC	MA01
		1	50 lbs.	Clean Harbors Braintree, Inc	MA99
		2	40 lbs.	Spring Grove Resource Recover, Inc.	MA01

Abbreviations:
gal. - gallons
lbs. - pounds
MA99 - Non Hazardous Waste
MA01 - Waste Oil

APPENDIX A

FIELD LOG SHEETS

Monitoring Well Development
Weymouth C/S Site
Weymouth, Massachusetts

Monitoring Well	Development Date	Equipment see notes	Volume Removed (Gal)	Observations/Notes
MW-201	7/29 & 08/03/16	X	30	Purged until visibly clear. Free product (NAPL) noted on water, Sheen and odor present, purge water drummed.
MW-202	8/2/2016	X	37	Purged until visibly clear. Water clearing with time pumped. Final turbidity = 156 NTU. No odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-203	8/2/2016	X	35	Purged until visibly clear. Water clearing with time pumped. Final turbidity = 58.4 NTU. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-204	7/29/2016	X	45	Purged until visibly clear. Water clearing with time pumped. Final turbidity = 97 NTU, No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-205	7/29/2016	X	31	Purged until visibly clear. Water clearing with time pumped. Final turbidity = 38 NTU, No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-206	10/20/2016	X	40	Purged until visibly clear. Water clearing with time pumped. Final turbidity = 100 NTU, No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-400	12/19/2016	X	45	Purged until visibly clear. Water clearing with time pumped and repeated surging of screen. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-401	12/19/2016	X	90	Purged until visibly clear. Water clearing with time pumped and repeated surging of screen. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-402	12/19 & 20/2016	X	52	Purged until visibly clear. Free Product (NAPL), Sheen and odor in water and on tubing and surge block, purged water drummed.
MW-403	12/19/2016	X	35	Purged until visibly clear. Water clearing with time pumped. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-404	12/21/2016	X	35	Purged until visibly clear. Free Product (NAPL), Sheen and moderate odor in water and on tubing and surge block, purged water drummed.
MW-405	12/20/2016	X	35	Purged until visibly clear. Water clearing with time pumped. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-406	12/21/2016	Y	60	Purged until visibly clear. Free Product (NAPL), Sheen and strong petroleum and sulfur-like odor on water. Staining on tubing and pump housing, purged water drummed.
MW-407	12/21/2016	Y	20	Purged until visibly clear. Free Product (NAPL), Sheen and moderate petroleum and sulfur-like odor on water. Staining on tubing and pump housing, purged water drummed.
MW-408	12/20/2016	X	50	Purged until visibly clear. Water clearing with time pumped. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-409	12/21/2016	Y	20	Purged until visibly clear. Water clearing with time pumped. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-410	12/22/2016	Y	45	Purged until visibly clear. Free Product (NAPL), Sheen and odor not extensive but in water and on tubing and surge block, purged water drummed.
MW-411	12/22/2016	Y	40	Purged until visibly clear, Free Product (NAPL), Sheen and petroleum and sulfur-like odor on water and staining on tubing and surge block, purged water drummed.
MW-412	12/22/2016	X	40	Purged until visibly clear. Free Product (NAPL), Sheen and odor in water and on tubing and surge block, purged water drummed.
MW-413	12/22/2016	X	35	Purged until visibly clear, Free Product (NAPL), Sheen and odor in water and on tubing and surge block, purged water drummed.

Monitoring Well Development
Weymouth C/S Site
Weymouth, Massachusetts

Monitoring Well	Development Date	Equipment see notes	Volume Removed (Gal)	Observations/Notes
MW-414	12/21/2016	X	35	Purged until visibly clear, Free Product (NAPL), Sheen and odor in water and on tubing and surge block, purged water drummed.
MW-415	12/20/2016	X	25	Purged until visibly clear, Trace amounts of sheen and odor in water and on tubing and surge block, purged water drummed.
MW-416	12/21/2016	Y	65	Purged until visibly clear. Water clearing with time pumped. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.
MW-417	12/20/2016	X	40	Purged until visibly clear. Water clearing with time pumped and repeated surging of screen. No Odor or sheen. Purged water discharged 25 ft up gradient of the well.

Notes:
X- Watterra hydrolift and check valve with surge block. Unit positioned in water column from top to bottom of screen to remove fines (silt).
Y - Proactive Water Spout 2 submersible pump used. Column surged at 2-3 ft zones throughout screen.
ft- feet
Gal - gallons
gpm - gallons per minute
NAPL - non-aqueous phase liquid
NTU - nephelometric turbidity units

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-101
SHEET: 1 of 5
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350557, 1109165
Ground Surface Elev. (ft.): 18.7
Final Boring Depth (ft.): 124
Date Start - Finish: 3/31/2016 - 4/7/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/6/16	0700	10.5	12 hrs
4/7/16	0700	12.5	36 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.5	TOPSOIL	18.2
									2				
		G-1	2.0-2.5					G-1: Dry, brown, fine to coarse SAND, little Silt, trace Gravel. (SM)					
5								Refer to boring B-01 for data from 2.5'-19.0' bgs.					
10												FILL	
15													
20		S-1	19.0-21.0	24	3	4 2 2 3	4	S-1: Loose, gray and red, fine to coarse GRAVEL, little medium to coarse Sand, trace Silt. (GP)	3				
		S-2	21.0-23.0	24	11	5 4 5 6	9	S-2: Loose, gray, fine to medium SAND, some Silt, trace Clay. (SM)	4		21.5		-2.8
												SILTY SAND	
											24		-5.3
25		S-3	24.0-26.0	24	18	8 3 3 3	6	S-3: Medium stiff, gray, CLAY & SILT, trace fine Sand, trace Gravel, trace fibers. Mild organic odor. (CL)	5			CLAY/SILT	
30		S-4	29.0-	24	24	7 7		S-4: Stiff, gray/olive, CLAY & SILT, trace fine Sand. (CL)	6				

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated on 3/31/16 using Vacmaster System 1000 to 6.0' below ground surface (bgs). Started drilling on 4/4/16.
3 - Drove and washed HW casing incrementally from 19.0'-34.0' bgs, drilled openhole from 34.0' bgs.
4 - Driller noted possible strata change at approximately 21.5' bgs based on drill cuttings.
5 - Driller noted possible strata change at approximately 24.0' bgs based on drill cuttings and drill effort.
6 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-101

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:41 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-101
SHEET: 2 of 5
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350557, 1109165
Ground Surface Elev. (ft.): 18.7
Final Boring Depth (ft.): 124
Date Start - Finish: 3/31/2016 - 4/7/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/6/16	0700	10.5	12 hrs
4/7/16	0700	12.5	36 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			31.0			8 8	15	PPv=1.75tsf, PPh=1.5tsf, PPr=0.9tsf					
												CLAY/SILT	
35		S-5	34.0-36.0	24	12	6 5 6 7	11	S-5: Stiff, tan, CLAY & SILT, trace fine Sand. (CL) Approximately 1" thick fine sand lense approximately 4" from tip of split spoon. PPv=2.25tsf, PPh=3.5tsf, PPr=1.25tsf			37.5		-18.8
40		S-6	39.0-41.0	24	12	6 7 9 12	16	S-6: Medium dense, brown, fine SAND and Silt. (SM)				SILTY SAND	
											42.5		-23.8
45		S-7	44.0-46.0	24	24	7 8 7 13	15	S-7: Stiff, tan, CLAY & SILT, trace fine Sand. (CL) PPv=1.65tsf, PPh=1.25tsf, PPr=0.5tsf				CLAY/SILT	
											47.5		-28.8
50		S-8	49.0-51.0	24	16	5 5 6 5	11	S-8: Medium dense, gray, fine SAND and Silty Clay. (SC)				SILTY SAND	
											52.5		-33.8
55		S-9	54.0-56.0	24	24	2 6 8 7	14	S-9: Stiff, gray, Clayey SILT, some fine Sand. (ML) PPv=0.75tsf, PPh=0.75tsf, PPr=0.25tsf	7			CLAY/SILT	
											57.5		-38.8
60		S-10	59.0-	24	24	2 6		S-10: Stiff, gray, Clayey SILT, some fine Sand. (ML)				CLAY/SILT AND SAND	

REMARKS

7 - Measured groundwater depth prior to beginning of drilling on 4/6/16 with casing to 25.0' bgs, see above.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-101

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:41 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-101
SHEET: 3 of 5
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350557, 1109165
Ground Surface Elev. (ft.): 18.7
Final Boring Depth (ft.): 124
Date Start - Finish: 3/31/2016 - 4/7/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/6/16	0700	10.5	12 hrs
4/7/16	0700	12.5	36 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			61.0			4 6	10						
65		S-11	64.0-66.0	24	23	2 4 4 5	8	S-11: Stiff, gray, Clayey SILT, some fine Sand. (ML)				CLAY/SILT AND SAND	
											67.5		-48.8
70		S-12	69.0-71.0	24	19	6 7 8 11	15	S-12: Medium dense, fine SAND, some Clay. (SC)				SILTY SAND	
											72.5		-53.8
75		S-13	74.0-76.0	24	15	4 2 4 16	6	S-13: Medium stiff, gray, CLAY & SILT, some fine Sand. (CL) PPv=0.5tsf, PPh=0.3tsf, PPr=0tsf					
80		S-14	79.0-81.0	24	18	8 6 17 8	23	S-14: Very stiff, gray, CLAY & SILT, some fine Sand. (CL) PPv=0.3tsf,PPh=0.10tsf, PPr=0tsf	8			CLAY/SILT AND SAND	
85		S-15	84.0-86.0	24	18	8 6 17 8	23	S-15: Very stiff, gray/olive, CLAY & SILT, some fine Sand. (CL) PPv=0.3tsf, PPh=0.1tsf, PPr=0tsf					
											87.5		-68.8
90		S-16	89.0-	24	15	13 23		S-16: Dense, gray/olive, fine SAND, some Silt. (SM)				SAND WITH SILT AND GRAVEL	

REMARKS

8 - Measured groundwater depth prior to beginning of drilling on 4/7/16 with casing to 25.0' bgs, see above.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-101

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:41 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-101
SHEET: 4 of 5
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350557, 1109165
Ground Surface Elev. (ft.): 18.7
Final Boring Depth (ft.): 124
Date Start - Finish: 3/31/2016 - 4/7/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/6/16	0700	10.5	12 hrs
4/7/16	0700	12.5	36 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			91.0			24 11	47						
95		S-17	94.0-96.0	24	15	19 23 25 28	48	S-17: Dense, gray, SILT, trace Sand. (ML)					
100		S-18	99.0-101.0	24	14	20 40 24 23	64	S-18: Very dense, gray/olive, fine to coarse SAND, little Gravel, little Silt. (SM)	9				
105		S-19	104.0-106.0	24	15	11 12 13 6	25	S-19: Medium dense, gray, SILT, trace Sand. (ML) Gravel in tip of split spoon.				SAND WITH SILT AND GRAVEL	
110		S-20	109.0-111.0	24	10	21 24 30 28	54	S-20: Hard, gray, CLAY & SILT, little Gravel, little fine to coarse Sand. (CL)	10				
115		S-21	114.0-116.0	24	13	21 24 24 23	48	S-21: Very dense, gray, fine to medium SAND, some Clayey Silt, little Gravel. (SM)			117.5		-98.8
120		S-22	119.0-	1	1	120/1"	R	S-22: Very dense, gray/white, fine to coarse SAND and				SAND AND GRAVEL	

REMARKS

9 - Driller noted drill chatter from approximately 101.0'-101.5' bgs.
10 - Driller noted drill chatter and increased drill effort at approximately 111.0' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-101

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:41 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-101
SHEET: 5 of 5
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350557, 1109165
Ground Surface Elev. (ft.): 18.7
Final Boring Depth (ft.): 124
Date Start - Finish: 3/31/2016 - 4/7/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/6/16	0700	10.5	12 hrs
4/7/16	0700	12.5	36 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
			119.1					Gravel, some Clay. (SC)				SAND AND GRAVEL	
									11		124		-105.3
125		S-23	123.9-124.0	1	0	120/1"	R	S-23: No recovery.					
								End of exploration at 124 feet.					
130													
135													
140													
145													
150													

REMARKS

11 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-101

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:42 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-102
SHEET: 1 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350460, 1109037
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 104.1
Date Start - Finish: 3/30/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
									1		0.5	TOPSOIL	12.2
									2		1.8	FILL	10.9
												OBSTRUCTION FILL	
5											4.5		8.2
10		S-1	9.0-11.0	24	12	4 11 19 26	30	S-1: Medium dense, brown, GRAVEL, some medium to coarse Sand, trace Silt, wet. (trace slag) (GW)	3			FILL	
15		S-2	14.0-16.0	24	10	6 5 6 6	11	S-2: Medium dense, dark brown, GRAVEL, some medium to coarse Sand, trace Silt, wet. (trace slag) (GW)			17.5		-4.8
20		S-3	19.0-21.0	24	8	16 8 7 11	15	S-3: Medium dense, dark brown/black, fine to coarse SAND, little Gravel, trace Silt, wet. (SP)				SAND	
25		S-4	24.0-26.0	24	12	9 10 15 16	25	S-4: Medium dense, brown, medium to coarse SAND, wet. (SP)			27.5		-14.8
30		S-5	29.0-	24	20	10 15		S-5: Very stiff, brown, SILT & CLAY, trace Sand, wet.				SILT AND SAND	

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated on 3/30/16 using Vacmaster System 1000 to 1.8' bgs, refusal encountered. Drill rig augered from approximately 1.8'-4.5' bgs, then vacced to 6.0' bgs. Started drilling on 4/13/16.
3 - Drove and washed HW casing incrementally from 6.0'-21.0' bgs, drilled open hole to 104.1' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-102

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:46 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-102
SHEET: 2 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350460, 1109037
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 104.1
Date Start - Finish: 3/30/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			31.0			15 13	30	(CL)					
35		S-6	34.0-36.0	24	18	5 6 8 7	14	S-6: Medium dense, brown, fine SAND and Silt, trace Clay, wet. (SM) 2" clay seam at 34.5' bgs.				SILT AND SAND	
											37.5		-24.8
40		S-7	39.0-41.0	24	24	5 5 5 7	10	S-7: Stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) PPv=1.4tsf, PPn=1.25tsf, PPr=0.5tsf	4			CLAY/SILT	
											42.5		-29.8
45		S-8	44.0-46.0	24	24	3 3 4 3	7	S-8: Loose, gray, SILT, some fine Sand, wet. (ML)					
50		S-9	49.0-51.0	24	24	3 3 10 8	13	S-9: Stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) PPv=0.6tsf, PPn=0.3tsf, PPr=0tsf				SILT AND SAND	
55		S-10	54.0-56.0	24	24	1 5 4 5	9	S-10: Stiff, gray, SILT, some fine Sand, trace Clay, wet. (ML)					
60		S-11	59.0-	24	24	7 5		S-11: Stiff, gray, SILT and fine Sand, wet. (ML)					

REMARKS

4 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-102

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:46 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-102
SHEET: 3 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350460, 1109037
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 104.1
Date Start - Finish: 3/30/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			61.0			6 9	11						
65		S-12	64.0-66.0	24	24	6 5 6 9	11	S-12: Medium dense, gray, SILT and fine Sand. (ML)				SILT AND SAND	
70		S-13	69.0-71.0	24	24	7 10 15 20	25	S-13: Medium dense, gray, SILT and fine Sand, wet. (ML)					
75		S-14	74.0-76.0	24	20	10 12 20 10	32	S-14: Hard, gray, SILT and fine Sand, wet. (ML)			74		-61.3
80		S-15	79.0-81.0	24	24	11 12 4 10	16	S-15: Very stiff, gray, CLAY & SILT, trace Sand, wet. (CL) PPv=0.1tsf, PPn=0tsf, PPr=0tsf				CLAY/SILT AND SAND	
85		S-16	84.0-86.0	24	24	12 12 13 14	25	S-16: Very stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) PPv=0.5tsf, PPn=0.5tsf, PPr=0tsf					
90		S-17	89.0-	24	24	6 9		S-17: Top 21": Hard, gray, CLAY & SILT, trace fine Sand,					

REMARKS

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-102

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:46 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-102
SHEET: 4 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350460, 1109037
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 104.1
Date Start - Finish: 3/30/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4.5"/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			91.0			31 21	40	wet. (CL) Bottom 3": Gray, fine to coarse SAND, little Gravel, wet. (SP) PPv=1.0tsf, PPn=0.9tsf, PPr=0.5tsf					
95		S-18	94.0-96.0	24	14	15 19 24 13	43	S-18: Top 2": Fine to coarse SAND, some Gravel. (SP) Bottom 12": Hard, gray, SILT, trace Sand, wet. (ML)				CLAY/SILT AND SAND	
											99		-86.3
100		S-19	99.0-101.0	24	12	19 33 35 26	68	S-19: Very dense, gray, fine to medium SAND, some Gravel, little Silt, wet. (SM)				SAND AND GRAVEL	
		S-20	104.0-104.1	1	0	100/1"	R	S-20: No recovery.	5 6		104.1		-91.4
105								End of exploration at 104.1 feet.					
110													
115													
120													

REMARKS

5 - Refusal on possible Glacial Till/Weathered Bedrock.
6 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-102

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:47 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-103
SHEET: 1 of 3
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350361, 1109124
Ground Surface Elev. (ft.): 12.8
Final Boring Depth (ft.): 80
Date Start - Finish: 3/29/2016 - 4/4/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5"/5"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/1/16	0630	12	15.5 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.5	TOPSOIL	12.3
									2		1.8	FILL	11.0
		G-1	2.0-2.5					G-1: Brown, fine to coarse SAND, little Silt, trace Gravel, dry. (SM)			2.8	OBSTRUCTION FILL	10.0
											3	FILL	9.8
5												OBSTRUCTION FILL	
											5.5		7.3
		S-1	6.0-8.0	24	18	16 22 24 11	46	S-1: Dense, dark gray/brown, fine to coarse SAND, some Silt, trace Gravel, dry. (SM)					
		S-2	8.0-10.0	24	16	5 4 3 2	7	S-2: Loose, dark gray, SILT, some fine to coarse Sand, little Gravel, wet. (trace slag) (ML)					
10													
		S-3	13.0-15.0	24	7	4 1 2 2	3	S-3: Loose, dark gray, fine to medium SAND, little Silt, little Gravel, wet. (SM)				FILL	
15													
		S-4	18.0-20.0	24	0	7 4 6 3	10	S-4: No recovery.					
20													
		S-5	23.0-25.0	24	16	7 2 3 3	5	S-5: Top 10": Dark gray, fine to medium SAND and Silt, little shells, trace Gravel, wet. (SM) Bottom 6": Olive/dark gray, SILT & CLAY, trace fine Sand, wet. (ML)			23.8		-11.0
25												CLAY/SILT	
		S-6	27.5-29.5	24	24	WH 2 1 2	3	S-6: Soft to medium stiff, olive, SILT & CLAY, trace fine Sand, wet. (ML) PPv=1.0tsf, PPh=1.0tsf, PPr=0.5tsf	3				
30													

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated on 3/29/16 and 3/30/16 using hand excavation. Refusal encountered at approximately 1.8' bgs, drill rig augered from approximately 1.8'-2.8' bgs, vacced with Vacmaster System 1000 from 2.8'-3.0' bgs, augered from approximately 3.0'-5.5' bgs, vacced from 5.5'-6.0' bgs. Started drilling on 3/30/16.
3 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-103

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:48 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-103
SHEET: 2 of 3
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350361, 1109124
Ground Surface Elev. (ft.): 12.8
Final Boring Depth (ft.): 80
Date Start - Finish: 3/29/2016 - 4/4/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5"/5"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/1/16	0630	12	15.5 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		U-1	30.0-32.0	24	6			U-1: Olive, CLAY & SILT, wet. (CL)					
		U-2	33.0-35.0	24	24			U-2: Olive, CLAY & SILT, wet. (CL)					
35													
		S-7	37.5-39.5	24	24	2 2 2 2	4	S-7: Soft to medium stiff, olive, CLAY & SILT, wet. (CL) PPv=1.5tsf, PPh=1.5tsf, PPr=0.75tsf					
40		U-3	40.0-42.0	24	24			U-3: Olive, CLAY & SILT, wet. (CL)					
45												CLAY/SILT	
		S-8	47.5-49.5	24	24	2 1 3 5	4	S-8: Soft to medium stiff, olive, CLAY & SILT, little fine Sand, wet. (CL) PPv=1.25tsf, PPh=1.5tsf, PPr=0.5tsf					
50		U-4	50.0-52.0	24	6			U-4: Olive, CLAY & SILT, trace fine Sand, wet. (CL)	4				
		U-5	53.0-55.0	24	24			U-5: Olive, SILT & CLAY, trace fine Sand, wet. (CL)					
55													
		S-9	57.5-59.5	24	24	2 11 8 9	19	S-9: Very stiff, olive, SILT & CLAY, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=0.75tsf					
60													

REMARKS

4 - Measured groundwater depth prior to beginning of drilling on 4/1/16 with casing to 25.0' bgs, see above.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-103

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:48 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-103
SHEET: 3 of 3
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350361, 1109124
Ground Surface Elev. (ft.): 12.8
Final Boring Depth (ft.): 80
Date Start - Finish: 3/29/2016 - 4/4/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5"/5"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/1/16	0630	12	15.5 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		U-6	60.0-62.0	24	24			U-6: Olive, SILT, trace fine Sand. (ML)				CLAY/SILT	
											62		-49.2
65													
		S-10	68.0-70.0	24	24	8 18 12 15	30	S-10: Top 8": Olive, fine SAND and Clay. (SC) Middle 12": Very stiff, olive, CLAY & SILT, trace fine Sand. (CL) Bottom 4": Olive, CLAY & SILT, some fine Sand. (CL) PPv=1.25tsf, PPh=1.25tsf, PPr=1.0tsf				CLAY/SILT AND SAND	
70													
75													
		S-11	78.0-80.0	24	24	6 3 7 15	10	S-11: Top 15": Stiff to very stiff, olive, CLAY & SILT, trace fine Sand. (CL) Bottom 9": Olive, Silty CLAY, some fine Sand. (CL) PPv=1.5tsf, PPh=1.5tsf, PPr=1.0tsf	5				
80								End of exploration at 80 feet.			80		-67.2
85													
90													

REMARKS

5 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-103

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:48 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-104
SHEET: 1 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350343, 1109003
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 111
Date Start - Finish: 3/30/2016 - 4/11/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	11.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
									1		0.5	TOPSOIL	12.2
									2				
5		S-1	6.0-8.0	24	18	10 18 16 15	34	S-1: Dense, gray/brown, fine to coarse SAND, some Gravel, little Silt. (SM)					
		S-2	8.0-10.0	24	4	10 14 12 11	26	S-2: Medium dense, gray/brown/white, fine to coarse SAND, little Gravel, little Silt. (SM)					
10													
15		S-3	14.0-16.0	24	8	13 7 5 5	12	S-3: Medium dense, gray, fine to coarse SAND, some Gravel, little Silt. (SM)				FILL	
20		S-4	19.0-21.0	24	10	10 20 14 13	34	S-4: Dense, gray, fine to coarse SAND, some Gravel, little Silt. (SM)					
25		S-5	24.0-26.0	24	4	12 10 14 13	24	S-5: Medium dense, gray, fine to coarse SAND and Gravel, little Silt. (Contains slag) (SM)					
30		S-6	29.0-	24	8	16 14		S-6: Medium dense, dark gray, fine to coarse SAND,					

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated on 3/30/16 using Vacmaster System 1000. Started drilling on 4/7/16.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-104

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:49 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-104
SHEET: 2 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350343, 1109003
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 111
Date Start - Finish: 3/30/2016 - 4/11/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	11.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
			31.0			8 9	22	some Gravel, little Silt. (Contains slag) (SM)				FILL	
											32.5		-19.8
35		S-7	34.0-36.0	24	24	1 2 6 6	8	S-7: Top 20": Stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.5tsf, PPr=0.75tsf Bottom 4": Gray, medium to coarse SAND, little Silt, trace Gravel. (SM)	3			CLAY/SILT	
											35.7		-23.0
												SILTY SAND	
40		S-8	39.0-41.0	24	20	3 4 4 4	8	S-8: Top 12": Gray, fine SAND, some Silt. (SM) Bottom 8": Gray, medium stiff, CLAY & SILT, trace fine Sand. (CL) PPv=2.0tsf, PPh=1.5tsf, PPr=1.0tsf			40		-27.3
45		S-9	44.0-46.0	24	20	3 2 3 3	5	S-9: Medium stiff, gray, Clayey SILT, some fine Sand. (ML)					
50		S-10	49.0-51.0	24	24	4 3 2 6	5	S-10: Medium stiff to stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.75tsf, PPh=1.5tsf, PPr=0.75tsf				CLAY/SILT	
55		S-11	54.0-56.0	24	24	4 6 4 11	10	S-11: Stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.5tsf, PPr=1.0tsf	4				
60		S-12	59.0-	24	24	2 7		S-12: Top 14": Stiff to very stiff, gray, CLAY & SILT, trace					

REMARKS

3 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.
4 - Drove and washed 4" ID casing incrementally to 55.0' bgs, drilled open hole below 55.0' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-104

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:49 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-104
SHEET: 3 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350343, 1109003
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 111
Date Start - Finish: 3/30/2016 - 4/11/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	11.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
			61.0			8 10	15	fine Sand. (CL) PPv=1.0tsf, PPh=0.75tsf, PPr=0.5tsf Bottom 8": Stiff to very stiff, gray, Clayey SILT and fine Sand. (ML)			60.2		47.5
65		S-13	64.0-66.0	24	24	6 6 7 10	13	S-13: Stiff, gray, Clayey SILT and fine Sand. (ML)					
70		S-14	69.0-71.0	24	10	11 17 28 16	45	S-14: Hard, gray, Clayey SILT and fine Sand. (ML)					
75		S-15	74.0-76.0	24	24	1 6 10 22	16	S-15: Very stiff, gray, CLAY & SILT. (CL) Approximately 2" sand seam approximately 6" from tip of split spoon. PPv=1.0tsf, PPh=1.0tsf, PPr=0.5tsf				CLAY/SILT AND SAND	
80		S-16	79.0-81.0	24	24	16 17 21 21	38	S-16: Hard, gray, Clayey SILT, some fine Sand. (ML)	5				
85		S-17	84.0-86.0	24	18	18 20 18 19	38	S-17: Hard, gray, Clayey SILT, some fine Sand. (ML)					
90		S-18	89.0-	24	24	18 12		S-18: Top 12": Gray, CLAY & SILT, some fine Sand. (CL)					

REMARKS

5 - Measured groundwater depth prior to beginning of drilling on 4/11/16 with casing to 54.0' bgs, see above.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-104

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:49 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-104
SHEET: 4 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350343, 1109003
Ground Surface Elev. (ft.): 12.7
Final Boring Depth (ft.): 111
Date Start - Finish: 3/30/2016 - 4/11/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	11.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			91.0			13 16	25	Middle 6": Silty CLAY, trace fine Sand. (CL) PPv=1.75tsf, PPh=1.5tsf, PPr=1.25tsf Bottom 6": Clayey SILT, some fine Sand. (ML)				CLAY/SILT AND SAND	
											92.5		-79.8
95		S-19	94.0-96.0	24	10	20 20 18 18	38	S-19: Dense, brown, fine to medium SAND, little Silt, trace Gravel. (SP-SM)				SAND WITH SILT	
100		S-20	99.0-101.0	24	12	20 21 28 19	49	S-20: Top 6": Dense, brown, fine to medium SAND, little Silt. (SM) Bottom 6": Hard, gray, Clayey SILT, some fine Sand. (ML)	6				
											102		-89.3
105		S-21	104.0-106.0	24	10	15 51 38 25	89	S-21: Very dense, gray, SILT and fine to coarse Sand, little Gravel. (ML)	7			SAND AND GRAVEL	
											107		-94.3
												PROBABLE BOULDER	
											109		-96.3
110		S-22	109.0-111.0	24	12	43 29 23 18	52	S-22: Very dense, gray, fine to coarse SAND and Gravel, little Clay. (SC)	8			SAND AND GRAVEL	
								End of exploration at 111 feet.			111		-98.3
115													
120													

REMARKS

6 - Driller noted increased drill effort and chatter at 102.0' bgs, indicating probable strata change.
7 - Driller noted increased drill effort and chatter at 107.0'-109.0' bgs, indicating probable boulder.
8 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-104

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:50 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-105
SHEET: 1 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350331, 1108815
Ground Surface Elev. (ft.): 13.0
Final Boring Depth (ft.): 107.6
Date Start - Finish: 3/29/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.5	TOPSOIL	12.5
									2		2	FILL	11.0
			2.0-6.0					VacuumVacuum excavated cuttings comprised of Slag from 2.0'-6.0' bgs.				SLAG	
5											6		7.0
		S-1	6.0-8.0	24	8	11 6 5 4	11	S-1: Medium dense, brown, GRAVEL, some fine to coarse Sand, trace Silt, wet. (GW)	3				
		S-2	8.0-10.0	24	12	7 4 6 4	10	S-2: Loose, black, GRAVEL, some fine to coarse Sand, trace Silt, wet. (trace Slag) (GW)					
10												FILL	
15		S-3	14.0-16.0	24	6			S-3: Brown, GRAVEL, some fine to coarse Sand, trace Silt, wet. (GW) Strong petroleum odor from 14.0'-19.0' bgs.	4				
20		S-4	19.0-21.0	24	12	7 4 3 3	7	S-4: Loose, olive, fine to medium SAND, trace Silt, wet. Slight petroleum odor. (SP)			21		-8.0
		S-5	21.0-23.0	24	16	7 5 5 2	10	S-5: Stiff, gray, CLAY & SILT, some fine Sand, wet.(CL)			22.5	CLAY/SILT	-9.5
25		S-6	24.0-26.0	24	14	4 3 6 8	9	S-6: Loose, brown, fine to coarse SAND and Clay, wet. (SC)				SAND AND CLAY	
											27.5		-14.5
30		S-7	29.0-	24	24	9 12		S-7: Very stiff, olive-gray, CLAY & SILT, trace fine Sand,				CLAY/SILT	

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated using Vacmaster System 1000 to 6.0' bgs on 3/29/16. Started drilling on 4/12/16.
3 - Drove and washed PW casing incrementally from 6.0'-19.0' bgs. Drove and washed HW casing incrementally from 19.0'-107.0' bgs.
4 - Elevated PID readings were reported and recorded by TRC between 14.0' and 19.0' bgs. Additional split spoon sampling was conducted as directed by TRC. Soil with high PID readings and cuttings in tub were placed in drum.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-105

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-105
SHEET: 2 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350331, 1108815
Ground Surface Elev. (ft.): 13.0
Final Boring Depth (ft.): 107.6
Date Start - Finish: 3/29/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			31.0			11 7	23	wet. (CL)					
35		S-8	34.0-36.0	24	0	10 8 10 10	18	S-8: No recovery.					
40		S-9	39.0-41.0	24	24	4 4 5 12	9	S-9: Stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL)					
45		S-10	44.0-46.0	24	24	4 5 5 3	10	S-10: Stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) PPv=0.25tsf, PPn=0.25tsf, PPr=0tsf	5			CLAY/SILT	
50		S-11	49.0-51.0	24	24	3 3 5 4	8	S-11: Medium stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) PPv=0.9tsf, PPn=0.8tsf, PPr=0.25tsf					
55		S-12	54.0-56.0	24	24	4 2 5 4	7	S-12: Medium stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) PPv=0.75tsf, PPn=1.0tsf, PPr=0.25tsf					
60		S-13	59.0-	24	12	9 11		S-13: Medium dense, gray, SILT and fine Sand, wet. (ML)			59	SILT AND SAND	-46.0

REMARKS

5 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-105

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:51 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-105
SHEET: 3 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350331, 1108815
Ground Surface Elev. (ft.): 13.0
Final Boring Depth (ft.): 107.6
Date Start - Finish: 3/29/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
			61.0			10 10	21						
65		S-14	64.0-66.0	24	16	6 13 9 8	22	S-14: Medium dense, gray, SILT and fine Sand, wet. (ML)					
70		S-15	69.0-71.0	24	18	4 7 20 22	27	S-15: Medium dense, gray, SILT and fine Sand, wet. (ML)					
75		S-16	74.0-76.0	24	18	3 13 30 28	43	S-16: Dense, gray, SILT & CLAY, little fine Sand, wet. (ML)				SILT AND SAND	
80		S-17	79.0-81.0	24	16	23 20 24 9	44	S-17: Dense, gray, SILT and fine Sand, wet. (ML)					
85		S-18	84.0-86.0	24	12	23 28 21 22	49	S-18: Dense, gray, SILT and fine Sand, wet. (ML)					
90		S-19	89.0-	24	18	28 24		S-19: Very dense, gray, fine to medium SAND, little Silt,					

REMARKS

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-105

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:51 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-105
SHEET: 4 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350331, 1108815
Ground Surface Elev. (ft.): 13.0
Final Boring Depth (ft.): 107.6
Date Start - Finish: 3/29/2016 - 4/15/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			91.0			31 30	55	wet. (SM)					
												SILT AND SAND	
											94		-81.0
95		S-20	94.0-96.0	24	4	16 19 24 21	43	S-20: Dense, gray, fine to coarse SAND and Gravel, little Silt, wet. (SM)					
100		S-21	99.0-101.0	24	8	21 23 26 37	49	S-21: Dense, gray, fine to coarse SAND and Gravel, trace Silt, wet. (SP)				SAND AND GRAVEL	
105		S-22	104.0-106.0	24	6	11 19 27 19	46	S-22: Dense, gray, fine to coarse SAND and Gravel, trace Silt, wet. (SP)					
		S-23	107.0-107.6	7	5	52 100/1"	R	S-23: Very dense, gray, fine to coarse SAND and Gravel, trace Silt, wet. (SP)	6		107.6		-94.6
								End of exploration at 107.6 feet.					
110													
115													
120													

REMARKS

6 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-105

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:51 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-106
SHEET: 1 of 3
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350269, 1109060
Ground Surface Elev. (ft.): 13.9
Final Boring Depth (ft.): 81
Date Start - Finish: 3/29/2016 - 4/6/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.5	TOPSOIL	13.4
									2				
		G-1	2.0-2.5					G-1: Gray/brown, fine to coarse SAND, some Silt, trace Gravel, dry. (SP)					
5													
		S-1	6.0-8.0	24	10	7 7 6 6	13	S-1: Medium dense, gray, fine SAND and Silt, little Gravel. (SM)	3				
		S-2	8.0-10.0	24	10	2 2 1 1	3	S-2: Very loose, gray, SILT, some fine to medium Sand, little Gravel. (ML)					
10												FILL	
		S-3	13.0-15.0	24	10	1 WOH 3 3	3	S-3: Loose, dark gray, fine to medium SAND and Silt, trace Gravel. (SM)					
15													
		S-4	18.0-20.0	24	8	7 4 6 3	10	S-4: Loose, gray, fine to coarse SAND, little Gravel, little Silt, trace shells in tip of split spoon. (SP-SM)					
20											20		-6.1
		S-5	23.0-25.0	24	8	7 5 2 1	7	S-5: Loose, gray, fine to medium SAND and Silt, trace Gravel. (SM)					
25												SAND AND SILT	
		S-6	27.0-29.0	24	24	7 6 7 3	13	S-6: Medium dense, gray, fine to coarse SAND, some Silt, trace Gravel, trace shells. (SM)					
30		S-7	29.0-	24	14	5 3		S-7: Loose, gray, SILT, some fine Sand, trace shells.					

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated to 6.0' bgs on 3/29/16 using Vacmaster System 1000. Started drilling on 4/4/16.
3 - Advanced PW casing incrementally to 25.0' bgs, sampled open hole below 25.0' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-106

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:52 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-106
SHEET: 2 of 3
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350269, 1109060
Ground Surface Elev. (ft.): 13.9
Final Boring Depth (ft.): 81
Date Start - Finish: 3/29/2016 - 4/6/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			31.0			3 4	6	(ML)					
35		S-8	34.0-36.0	24	2	3 7 9 8	16	S-8: Medium dense, gray, GRAVEL, some fine to coarse Sand, trace Silt. (GP)					
		S-9	36.0-38.0	24	3	3 12 14 14	26	S-9: Medium dense, gray, GRAVEL, some fine to coarse Sand, trace Silt. (GP)					
40		S-10	38.0-40.0	24	3	5 8 14 12	22	S-10: Medium dense, gray, GRAVEL, some fine to coarse Sand, trace Silt. (GP)				SAND AND SILT	
45		S-11	44.0-46.0	24	18	9 17 15 14	32	S-11: Dense, gray, SILT and fine Sand, little Gravel, trace Clay. (ML)			47.5		-33.6
50		S-12	49.0-51.0	24	24	6 8 10 7	18	S-12: Very stiff, gray, Clayey SILT, trace fine Sand. (ML) PPv=1.0tsf, PPh:1.0tsf, PPr=0.75tsf	4				
55		S-13	54.0-56.0	24	24	7 10 10 9	20	S-13: Very stiff, gray/olive, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=1.0tsf	5			CLAY/SILT AND SAND	
60		S-14	59.0-	24	24	12 12		S-14: Very stiff, gray/olive, CLAY & SILT, some fine					

REMARKS

4 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.
5 - Drove and washed HW casing to 55.0' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-106

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:53 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-106
SHEET: 3 of 3
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: Truck Mounted
Rig Model: Diedrich D-90
Drilling Method: Drive & Wash

Boring Location (N,E): 15350269, 1109060
Ground Surface Elev. (ft.): 13.9
Final Boring Depth (ft.): 81
Date Start - Finish: 3/29/2016 - 4/6/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			61.0			13 14	25	Sand. (CL) PPv=1.75tsf, PPh=1.5tsf, PPr=1.25tsf					
65		S-15	64.0-66.0	24	24	12 12 10 14	22	S-15: Top 12": Very stiff, gray/olive, SILT, some fine Sand, trace Clay. (ML) PPv=1.5tsf, PPh=1.25tsf, PPr=1.0tsf Bottom 12": Gray/olive, Silty CLAY, trace fine Sand. (CL)					
70		S-16	69.0-71.0	24	24	5 8 15 12	23	S-16: Top 12": Very stiff, gray/olive, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=1.0tsf Bottom 12": Gray/brown, fine SAND and Silt. (SM)				CLAY/SILT AND SAND	
75		S-17	74.0-76.0	24	24	16 14 15 19	29	S-17: Top 9": Very stiff, gray/olive, SILT, some fine Sand, little Clay. (ML) Middle 6": Gray/olive, Clayey SILT, some fine Sand. (ML) Bottom 9": Gray/olive, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.5tsf, PPr=1.0tsf					
80		S-18	79.0-81.0	24	24	16 13 11 12	24	S-18: Very stiff, gray/olive, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.5tsf, PPr=1.0tsf	6		81		-67.1
								End of exploration at 81 feet.					
85													
90													

REMARKS

6 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-106

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:53 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-107
SHEET: 1 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350220, 1108976
Ground Surface Elev. (ft.): 14.4
Final Boring Depth (ft.): 109
Date Start - Finish: 3/31/2016 - 4/20/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5, 4.5/4, 3.5/3

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
								Refer to boring B-08 for additional data from 0'-13.0' bgs.	1		0.5	TOPSOIL	13.9
									2				
5													
10													
		S-1	13.0-15.0	24	4	11 17 13 10	30	S-1: Dense, brown/blue/white, fine GRAVEL, some coarse Sand, wet. (GW) Gravel is rounded.	3			FILL	
15													
20													
		S-2	23.0-25.0	24	6	11 8 5 5	13	S-2: Medium dense, brown/blue/white, fine GRAVEL, some coarse Sand, wet. (GW) Gravel is rounded.					
25													
30													

REMARKS

1 - Boring location surveyed by VHB on 3/29/16, boring elevation noted on stake.
2 - Borehole preexcavated on 3/31/16 using Vacmaster System 1000 to 6.0' bgs. Started drilling on 4/15/16
3 - Drove and washed PW casing incrementally from 6.0'-20.0' bgs. Drove and washed HW casing incrementally from 20.0'-40.0' bgs. Drove and washed NW casing incrementally from 40.0'-108.0' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-107

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:54 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-107
SHEET: 2 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350220, 1108976
Ground Surface Elev. (ft.): 14.4
Final Boring Depth (ft.): 109
Date Start - Finish: 3/31/2016 - 4/20/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5, 4.5/4, 3.25/3

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
												FILL	
											33		-18.6
35		S-3	33.0-35.0	24	12	15 3 3 2	6	S-3: Medium stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) 2" of organic silt at 33.0' bgs.					
40		S-4	39.0-41.0	24	24	7 9 12 11	21	S-4: Very stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) 2" fine sand seam at 40.0' bgs.				CLAY/SILT	
45		S-5	44.0-46.0	24	24	4 5 14 10	19	S-5: Top 12": Very stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL) Bottom 12": Very stiff, gray, Clayey SILT, trace fine Sand, wet. (ML)					
50		S-6	49.0-51.0	24	24	3 4 4 5	8	S-6: Medium stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL)					
											52.5		-38.1
55		S-7	54.0-56.0	24	24	11 9 5 6	14	S-7: Stiff, gray, Clayey SILT, some fine Sand, wet. (ML)				CLAY/SILT AND SAND	
60		S-8	59.0-	24	24	5 20		S-8: Hard, gray, CLAY & SILT, trace fine Sand, wet. (CL)					

REMARKS

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-107

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:54 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-107
SHEET: 3 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350220, 1108976
Ground Surface Elev. (ft.): 14.4
Final Boring Depth (ft.): 109
Date Start - Finish: 3/31/2016 - 4/20/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5, 4.5/4, 3.25/3

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
			61.0			11 14	31	2" sand seam at 60.0' bgs.					
65		S-9	64.0-66.0	24	24	9 8 5 6	13	S-9: Very stiff, gray, CLAY & SILT, trace fine Sand, wet. (CL)				CLAY/SILT AND SAND	
70		S-10	69.0-71.0	24	24	7 3 4 11	7	S-10: Medium stiff, gray, Clayey SILT, trace fine Sand, wet. (ML)			72.5		-58.1
75		S-11	74.0-76.0	24	18	17 13 25 31	38	S-11: Dense, gray, SILT and fine Sand, wet. (ML)					
80		S-12	79.0-81.0	24	24	23 22 26 33	48	S-12: Dense, gray, fine SAND and Silt, wet. (SM)				SILTY SAND	
85		S-13	84.0-86.0	24	0	24 26 24 23	50	S-13: No recovery.					
90		S-14	89.0-	24	14	37 41		S-14: Top 5": Hard, gray, gravelly CLAY, some fine to					

REMARKS

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TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-107
SHEET: 4 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: N. Williams
Drilling Co.: New England Boring
Foreman: G. Twombly, Jr.

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350220, 1108976
Ground Surface Elev. (ft.): 14.4
Final Boring Depth (ft.): 109
Date Start - Finish: 3/31/2016 - 4/20/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5, 4.5/4, 3.25/3

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			91.0			45 53	86	coarse Sand, wet. (CL) Bottom 9": Very dense, brown, fine to medium SAND, trace Gravel, trace Silt, wet. (SP)					
95		S-15	94.0-96.0	24	10	17 16 15 16	31	S-15: Dense, gray, fine to coarse SAND, some Silt, little Gravel, wet. (SM)				SILTY SAND	
											99		-84.6
100		S-16	99.0-101.0	24	10	26 19 24 21	43	S-16: Dense, light brown, fine to coarse SAND, some Gravel, little Silt, wet. (SM)					
105		S-17	103.0-105.0	24	8	66 30 32 32	62	S-17: Very dense, gray, GRAVEL and fine to coarse Sand, little Silt, wet. (GM)				SAND AND GRAVEL	
		S-18	108.0-109.0	12	10	153 110		S-18: Very dense, gray, fine to coarse SAND, little Gravel, little Silt, wet. (SM)	4		109		-94.6
110								End of exploration at 109 feet.					
115													
120													

REMARKS

4 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-107

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:54 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-108
SHEET: 1 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien / N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350219, 1109125
Ground Surface Elev. (ft.): 14.2
Final Boring Depth (ft.): 106
Date Start - Finish: 3/30/2016 - 4/13/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	8.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.5	TOPSOIL	13.7
									2				
		G-1	2.0-3.0					G-1: Gray/brown, fine to coarse SAND, little Silt, little Gravel. (SM)				FILL	
											4		10.2
5											4	OBSTRUCTION FILL	10.1
											4.6	FILL	9.6
											5	OBSTRUCTION FILL	9.2
		S-1	6.0-8.0	24	18	39 20 7 8	27	S-1: Dense, gray/brown, fine to coarse SAND, some Gravel, little Silt. (SM)	3				
10		S-2	9.0-11.0	24	13	5 3 2 4	5	S-2: Medium stiff, gray, SILT, trace fine to medium Sand, trace brick. (ML)				FILL	
15		S-3	14.0-16.0	24	18	3 2 1 1	3	S-3: Soft, dark gray, SILT, some fine to medium Sand, trace Gravel. (ML)					
											17		-2.8
20		S-4	19.0-21.0	24	24	WOH WOH 2 1	2	S-4: Very soft, gray, CLAY & SILT, trace fine Sand. (CL) PPv=0.75tsf, PPh=0.5tsf, PPr=0.5tsf	4				
		U-1	22.0-24.0	24	23			U-1: Gray-brown, CLAY & SILT. (CL)				ORGANIC SILT	
25		S-5	24.0-26.0	24	24	1 2 2 6	4	S-5: Top 18": Medium stiff, Clayey SILT, little fine Sand. (ML) Bottom 6": Gray, CLAY & SILT, trace organic fibers. (CL) PPv=1.0tsf, PPh=0.75tsf, PPr=0.5tsf					
30		S-6	29.0-	24	0	WOH 1		S-6: Recovery was 4" of wash material; possible slag.					

REMARKS

1 - Boring Location surveyed by VHB on 3/19/16, boring elevation noted on stake.
2 - Borehole preexcavated on 3/30/16 to 6.0' bgs using Vacmaster System 1000. Vacuum excavation met refusal at 4.0' bgs, drill rig advanced augers to 4.1' bgs, vacced to 4.6' bgs, augered to 5.0' bgs, vacced to 6.0' bgs. Started drilling on 4/7/16.
3 - Advanced PW casing incrementally to 25.0' bgs, drilled open hole below 25.0' bgs.
4 - Pocket penetrometer used on cohesive samples collected. PPv= vertical plane, PPh=horizontal plane, PPr= remolded.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-108

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:55 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-108
SHEET: 2 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien / N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
Drilling Method: Drive & Wash

Boring Location (N,E): 15350219, 1109125
Ground Surface Elev. (ft.): 14.2
Final Boring Depth (ft.): 106
Date Start - Finish: 3/30/2016 - 4/13/2016

H. Datum: NAD 83
V. Datum: NAVD 88

Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	8.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			31.0			1 2	2						
												ORGANIC SILT	
35		S-7	34.0-36.0	24	24	WOH 1 1 2	2	S-7: Top 14": Gray, CLAY & SILT, trace fine Sand. (CL) PPv=0.5tsf, PPh=0.5tsf, PPr=0.25tsf Middle 6": Gray, Clayey SILT, little fine Sand. (ML) Bottom 4": Gray, fine to medium SAND, little Silt. (SP)			35.7		-21.5
												SILTY SAND	
											37.5		-23.3
40		S-8	39.0-41.0	24	24	3 3 3 3	6	S-8: Medium stiff to stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=1.0tsf					
		U-2	42.0-44.0	24	0			U-2: No recovery.					
45		U-3	45.0-47.0	24	24			U-3: Olive, Silty CLAY. (CL)					
		S-9	47.0-49.0	24	24	3 3 4 8	7	S-9: Medium stiff to stiff, gray, Silty CLAY, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=1.0tsf				CLAY/SILT	
50		S-10	49.0-51.0	24	24	8 4 5 6	9	S-10: Stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=1.0tsf					
55		S-11	54.0-56.0	24	24	3 2 3 3	5	S-11: Medium stiff to stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.75tsf, PPh=1.5tsf, PPr=1.0tsf	5				
											57.5		-43.3
60		S-12	59.0-	24	24	6 10		S-12: Medium dense, gray, SILT, trace fine Sand. (ML)				CLAY/SILT AND SAND	

REMARKS

5 - Measured groundwater depth prior to beginning of drilling on 4/11/16 with casing to 39.0' bgs, see above.

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Exploration No.: B-108

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:56 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Spectra Energy
Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-108
SHEET: 3 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien / N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
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Hammer Type: Safety Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
4/11/16	0700	8.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
			61.0			9 7	19						
65		S-13	64.0-66.0	24	24	5 4 7 5	11	S-13: Stiff, gray, SILT, trace fine Sand. (ML)					
70		S-14	69.0-71.0	24	24	3 4 8 12	12	S-14: Top 18": Very stiff, gray, CLAY & SILT, trace fine Sand. (CL) PPv=1.5tsf, PPh=1.25tsf, PPr=0.75tsf Bottom 6": Gray, Clayey SILT, some fine Sand. (ML)				CLAY/SILT AND SAND	
75		S-15	74.0-76.0	24	24	11 13 7 7	20	S-15: Top 12": Very stiff, gray, SILT & CLAY, little fine Sand. (ML) PPv=1.5tsf, PPh=1.25tsf, PPr=0.75tsf Bottom 6": Gray, Clayey SILT, some fine Sand. (ML)					
											79		-64.8
80		S-16	79.0-81.0	24	10	23 19 26 17	45	S-16: Dense, brown, GRAVEL and fine to coarse Sand, trace Silt. (GP-GM)	6 7				
85		S-17	84.0-86.0	24	12	26 24 17 23	41	S-17: Dense, brown, GRAVEL, little Silt, little fine Sand, wet. (GM)				SAND WITH SILT AND GRAVEL	
90		S-18	89.0-	24	16	10 39		S-18: Very dense, brown, fine to coarse SAND and					

REMARKS

6 - Driller noted probable strata change at 79.0' bgs due to drill effort and chatter.
7 - Driller advanced HW casing to 84.0' bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

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TEST BORING LOG

GZA GeoEnvironmental, Inc.
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Weymouth Compressor Station
Weymouth, Massachusetts

EXPLORATION NO.: B-108
SHEET: 4 of 4
PROJECT NO: 09.0025891.00
REVIEWED BY: A. Blaisdell

Logged By: C. Navien / N. Williams
Drilling Co.: New England Boring
Foreman: B. Cross

Type of Rig: ATV Mounted
Rig Model: Mobile B-53
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Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5.5/5" & 4.5/4"

Sampler Type: SS
Sampler O.D. (in.): 2
Sampler Length (in.): 24
Rock Core Size: None

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
4/11/16	0700	8.5	84 hrs

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
			91.0			33 36	72	Gravel, little Silt, wet. (SM)					
95		S-19	94.0-96.0	24	6	14 17 14 20	31	S-19: Dense, brown, medium to coarse SAND, little Gravel, wet. (SP)				SAND WITH SILT AND GRAVEL	
100		S-20	99.0-101.0	24	24	36 38 61 61	99	S-20: Very dense, brown, medium to coarse SAND, little Gravel, trace Silt, wet. (SP)	8 9		103		-88.8
105		S-21	104.0-106.0	24	8	52 64 51 18	>100	S-21: Very dense, gray, fine to coarse SAND, some Gravel, trace Silt, wet. (SP)				SAND AND GRAVEL	
								End of exploration at 106 feet.			106		-91.8
110													
115													
120													

REMARKS

8 - Driller noted probable strata change at 103.0' bgs due to drilling effort and chatter; possible Sand and Gravel.
9 - Upon completion of drilling, borehole was backfilled with cuttings. Casing was removed as/after cuttings were placed. During casing retrieval, the lower approximately 50' of casing sheared-off and remained in the borehole. The borehole was backfilled with cuttings with the lower portion of the casing in place.

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Exploration No.: B-108

GZA TEMPLATE TEST BORING; 6/6/2016; 9:23:56 AM

650 Suffolk Street
Lowell, MA
Telephone: 978-970-5600
Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/26/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-1
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 24
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 6'; Cored to 9'; Hollow-stem auger to 24'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–5					Dark grey SILT and brown fine SAND.	2.7	COMP-123 0-1'	No monitoring well installed.
6–8					Pre-cored to 9 feet. No sample.			
9–10	10	24/20			Black to brown fine to medium SAND, some clinkers and brick, little fine to coarse gravel and silt.	0.1		
10–14	15 14 12							
14–15	23	24/10			Black to brown fine to medium SAND, some clinkers, brick, and coal, little fine to coarse gravel and silt.	0.1	COMP-123-Fill	
15–18	15 8 5							
18–19	3	24/6			Black to brown fine to medium SAND, some clinkers, brick, and coal, little fine to coarse gravel and silt.	0.3		
19–20	3 2				Grey Silty CLAY, some fine sand.			
20–21	2 4	24/15			Dark brown to black fine to meidum SAND, some silt, brick, and clinkers.	0.0		
21–22	7 7				Red-brown fine to coarse SAND and fine to coarse GRAVEL, little silt.			
22–23	8 6	24/16			Red-brown fine to coarse SAND and fine to coarse GRAVEL, little silt.	0.0	COMP-123-Native	
23–24	7 3 3				Grey Silty CLAY, some fine to medium sand. End of Boring @ 24 feet-terminated.			

TRC
650 Suffolk Street
Lowell, MA
Telephone: 978-970-5600
Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
BORING/WELL NUMBER B-2
TRC GEOLOGIST Max Scott
SCREEN TYPE/SLOT NA
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
FILTER PACK TYPE NA
DATE DRILLED 6/26/2015
SEAL TYPE NA
LOCATION 6 Bridge St
DEPTH TO WATER (Approximate Feet) NA
SAMPLING METHOD 24" Split spoon
TOTAL DEPTH (Feet) 30
DRILLING METHOD HSA
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)
NOTES Hand auger to 1'; Vac-ex to 3'; Cored to 8'; Hollow-stem auger to 30'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–3					Dark grey SILT, little fine to coarse gravel, trace clinkers, coal, and brick (refusal with vaccuum excavation at 3').	0.0	COMP-123 0-1'	No monitoring well installed.
3–5					Solid obstruction (most likely concrete agregate).			
5–8					Pre-cored to 8 feet. No sample.			
8–12	7 6 8 5	24/8			Black fine to coarse SAND and fine GRAVEL, some silt, brick, clinkers.	0.1		
13–17	3 3 2 5	24/5			Black fine to coarse SAND and fine GRAVEL, some silt, brick, clinkers.	0.3	COMP-123-Fill	
18–22	2 3 2 4	24/3			Black fine to coarse SAND and fine GRAVEL, some silt, brick, clinkers.	0.1		
23–27	4 2 5 5	24/3			Black SILT and fine to coarse SAND, some fine to coarse gravel, brick, and clinkers.	0.0		
28–30	8 6 3 2	24/8			Grey Silty CLAY, some very fine sand.	0.0	COMP-123-Native	
					End of Boring @ 30 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/26/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-3
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 27
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 3'5"; Cored to 9'; Hollow-stem auger to 27'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–3					Dark grey SILT, little fine to coarse gravel, trace clinkers, coal, and brick (refusal with vaccuum excavation at 3'5").	0.0	COMP-123 0-1' 1340	No monitoring well installed.
4–6					Solid obstruction (most likely concrete agregate).			
7–9					Pre-cored to 9 feet. No sample.			
10–11	7 6 8 9	24/3			Black to brown fine to coarse SAND and fine to coarse GRAVEL, some brick and clinkers.	0.3		
12–15		24/0					COMP-123-Fill	
16–19								
20–21	8 8 8 9	24/6			Black to brown fine to coarse SAND and fine to coarse GRAVEL, some silt.	0.1		
22–23								
24	11 18	24/10			Light brown fine to medium SAND.	0.0		
25	36 36				Light brown very dense CLAY and SILT.			
26–27		24/24			Light brown very dense CLAY and SILT.	0.0	COMP-123-Native	
					End of Boring @ 27 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/23/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD Drive and Wash

BORING/WELL NUMBER B-4
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 101
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 3'2"; Cored to 9'; Hollow-stem auger to 101'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–5					Dark grey SILT, little fine to coarse gravel, clinkers, coal, ash, and brick (refusal with vaccuum excavation at 3'2").	0.5	COMP-467 0-1'	No monitoring well installed.
5–9					Solid obstruction (most likely concrete agregate). Pre-cored to 9'. No sample.			
10	7 7 7 8	24/20			Dark brown fine SANDY SILT, trace brick and clinkers, wet @ 11'.	0.1		
15	3 2 5 7	24/9			Dark brown fine to medium SAND, little silt, trace brick and clinkers.	0.0		
20	4 4 3 2	24/6			Black to brown coarse SAND and fine GRAVEL, some brick and clinkers, little silt.	5.6	COMP-467-FILL	
25	WOR WOH 4 2	24/24			Grey to black SILTY CLAY, some fine gravel, brick, clinkers, and coal. Less dense grey CLAY, some silt, trace medium sand. Shear Strength tests and Shelby Tube collection.	1.0		
40	3 2 1 4	24/24			Grey CLAY, little silt.	0.0	COMP-467-Native	
45	4 3 3 4	24/23			Grey CLAY, some silt, little very fine sand.	0.0		
50						0.0		

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BORING/WELL CONSTRUCTION LOG

BORING/WELL NUMBER B-4
DATE DRILLED 6/23/2015

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
51	5	24/24						
52	7							
53	3							
54	4							
55	4	24/24				0.0		
56	3							
57	2							
58	4							
59								
60								
61					Grey SILTY very fine SAND, some clay to terminal depth.			
62								
63								
64								
65								
66								
67								
68								
69								
70								
71								
72								
73								
74								
75								
76								
77								
78								
79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								
93								
94								
95								
96								
97								
98								
99								
100								
101					End of Boring @ 101 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/17/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD Drive and Wash

BORING/WELL NUMBER B-5
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 124
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 4'; Cored to 9'; Hollow-stem auger to 124'3"

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–9					Dark grey SILT and brown SAND, some fine to coarse gravel, trace clinkers.	0.0		No monitoring well installed.
					Dark grey to black fine SAND and SILT, some fine to coarse gravel, brick, and clinkers.			
					Brown fine SAND (refusal with vaccuum excavation at 4').			
					Solid obstruction (most likely concrete agregate).			
					Pre-cored to 9'. No sample.			
10–14	6 5 2 3	24/12			Dark grey to black SILT, little clay, fine sand, fine to medium gravel, brick, plastic, and glass fragments.	0.3		
15–19	1 1 4 7	24/21			Dark grey to black SILT, some clay, little fine to medium sand.	0.2		
					Dark grey to black SILT and fine SAND, trace clay and fine gravel.			
20–24	7 4 2 5	24/8			Black SILT and FILL DEBRIS (brick, clinkers, fine to medium gravel).	6.4	B-5 (19-21') 1035	
25–29	1 1 2 5	24/24			Dark grey SILT, some fine sand, little clay.	0.3		
30–34	1 1 3 2	24/24			Grey SILT and CLAY.	1.3		
35–39	1 1 6 3	24/24			Grey SILT and CLAY.	1.2		
					Dark grey to black SILTY SAND.			
40–44	WOR WOH 2 5	24/24			Grey CLAY, little silt.	1.3		
45–49	6 21 21 13	24/24			Grey CLAY with interbedded SILT and fine SAND to terminal depth. Glacial till observed 101-124'3".	1.0		
50								

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BORING/WELL CONSTRUCTION LOG

BORING/WELL NUMBER B-5
DATE DRILLED 6/17/2015

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								
61								
62								
63								
64								
65								
66								
67								
68								
69								
70								
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105								
106								
107								

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BORING/WELL CONSTRUCTION LOG

BORING/WELL NUMBER B-5
DATE DRILLED 6/17/2015

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
108								
109								
110								
111								
112								
113								
114								
115								
116								
117								
118								
119								
120								
121								
122								
123								
124					End of Boring @ 124 feet 3 inches-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/25/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-6
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 23
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 2'2"; Cored to 9'; Hollow-stem auger to 23'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1					Dark grey SILT and brown SAND, some fc gravel, trace clinkers.			No monitoring well installed.
2					Brown fine SAND (refusal with vaccuum excavation at 2'2").	0.3	COMP-467 0-1'	
3					Solid obstruction (most likely concrete agregate).			
4								
5								
6					Black SILT, little fine sand and clinkers.			
7					Pre-cored to 9 feet. No sample.			
8								
9								
10	2 4 6 10	24/12			Brown to black fine to coarse SAND and SILT, little brick and coal.	0.1		
11								
12								
13								
14								
15	5 4 6 4	24/8			Dark brown to black fine to coarse SAND and fine GRAVEL, some silt, brick, and clinkers.	0.4	COMP-467-FILL	
16								
17								
18								
19								
20	5 5 10	24/10			Dark brown to black fine to coarse SAND and fine GRAVEL, some silt, brick, and clinkers.	0.1		
21	3							
22	4 3	24/14			Dark brown to black fine to coarse SAND and fine GRAVEL, some silt, brick, and clinkers.	0.1	COMP-467-Native	
23	2 3				Grey less dense CLAY, some silt, little fine sand.			
					End of Boring @ 23 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/25/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-7
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 25
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 3'4"; Cored to 9'; Hollow-stem auger to 25'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–3					Dark grey SILT, little fine to coarse gravel, trace clinkers, coal, and brick (refusal with vaccuum excavation at 3'4").	0.1	COMP-467 0-1'	No monitoring well installed.
4–5					Solid obstruction (most likely concrete agregate).			
6–9					Pre-cored to 9 feet. No sample.			
10–11	2 1 2 2	24/2			Brown to black fine to medium SAND and SILT, some brick, clinkers, and fine to medium gravel.	0.1		
14–15–16–18	8 8 5 4	24/10			Dark brown to black fine SAND and SILT, little brick, clinkers, and fine to medium gravel.	0.0	COMP-467-FILL	
19–20	5 4	24/2			Dark brown to black fine SAND and SILT, little brick, clinkers, and fine to medium gravel.	0.3		
21–22	4 8 6 3	24/6			Dark brown to black fine to coarse SAND and fine GRAVEL, some silt, brick, and clinkers.	0.4		
22–23	4 2				Grey less dense CLAY, some silt, little fine sand.			
23–24–25	3 3 3 3	24/8			Grey to black Silty CLAY, little fine sand.	0.0	COMP-467-Native	
					End of Boring @ 25 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/25/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-8
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 38
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 6'; Cored to 8'; Hollow-stem auger to 38'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1					Dark grey fine SAND and SILT, little fine to coarse gravel, trace ash and clinkers.			No monitoring well installed.
2					Dark grey to black SILT, some fine sand, little clinkers and brick fragments.	8.4	COMP-8910 0-1'	
3					Brown fine to medium SAND.			
4								
5								
6					Pre-cored to 8 feet. No sample.			
7								
8								
9	21 26 21 21	24/16			Dark brown SILT and fine SAND, trace clinkers and brick.	NA		
10								
11								
12								
13								
14	10 9 10 8	24/0			No recovery	NA	COMP-8910-Fill	
15								
16								
17								
18								
19	4 6 5 6	24/8			Grey fine to coarse SAND, little fine to medium gravel and silt.	0.7		
20								
21								
22								
23								
24								
25	5 5 7 8	24/4			Dark brown to black fine to coarse SAND, some fine to coarse gravel, little silt.	0.0		
26								
27								
28								
29								
30	7	24/6			Grey fine to coarse SAND, some fine to coarse gravel, little silt.	0.0		

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BORING/WELL CONSTRUCTION LOG

BORING/WELL NUMBER B-8
DATE DRILLED 6/25/2015

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
31	4 6 6							
32								
33								
34								
35	5 7 6	24/7			Grey fine to coarse SAND, some fine to coarse gravel, little silt.	0.0		
36	11 16	24/10			Dark grey to black CLAY, little silt and fine sand. Grey fine SAND and SILT, some clay.	0.0	COMP-8910-Native	
37	7 12							
38	8				End of Boring @ 38 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/25/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-9
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 36
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 6'; Cored to 9'; Hollow-stem auger to 36'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1–5					Dark grey fine SAND and SILT, little fc gravel, trace ash, brick, and clinkers.	1.0	COMP-8910 0-1'	No monitoring well installed.
6–9					Pre-cored to 9 feet. No sample.			
10	13	24/23			Dark brown SILT and fine to medium SAND, wet @ 9.5 feet.	0.0		
11	12							
12–13	11							
14	11							
15	8	24/3			Dark brown SILT and fine to coarse SAND, trace fine gravel and brick fragments.	0.0	COMP-8910-Fill	
16	7							
17–18	7							
19	7							
20	9	24/10			Brown fine to coarse SAND, trace fine gravel and silt.	0.0		
21	11							
22–23	6							
24	6							
25	5	24/8			Brown fine to coarse SAND, some fine to medium gravel, little silt.	0.0		
26	6							
27–28	6				Grey Silty fine SAND, little clay.			
29	8							
30	12	24/4			Grey fine to coarse SAND, some fine to coarse gravel, little silt.	0.1		

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BORING/WELL CONSTRUCTION LOG

BORING/WELL NUMBER B-9
DATE DRILLED 6/25/2015

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
31	7							
	9							
	9							
32								
33								
34								
	2	24/23			Grey to black CLAY, some silt and fine sand.	0.0	COMP-8910-Native	
35	4							
	5							
36	14				End of Boring @ 36 feet-terminated.			

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BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER SPECTRA/140143.000.7978
TRC GEOLOGIST Max Scott
DRILLING CONTRACTOR/FOREMAN New England Boring Company/Jerry
DATE DRILLED 6/25/2015
LOCATION 6 Bridge St
SAMPLING METHOD 24" Split spoon
DRILLING METHOD HSA

BORING/WELL NUMBER B-10
SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 26
GROUND ELEVATION (Feet)
REFERENCE ELEVATION (Feet)

NOTES Hand auger to 1'; Vac-ex to 2'8"; Cored to 8'; Hollow-stem auger to 26'

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
1					Dark grey fine SAND and SILT, little fine to coarse gravel, trace ash and clinkers (refusal with vaccuum excavation at 2'8").	0.7	COMP-8910 0-1'	No monitoring well installed.
2								
3					Solid obstruction (most likely concrete agregate).			
4								
5								
6					Pre-cored to 8 feet. No sample.			
7								
8	12	24/18			Brown fine to medium SAND, some silt.	2.5		
9	10				Dark grey to black SILT, little brick, slag, and fine sand.			
10	10							
11	11							
12								
13								
14	1	24/2			Black fine SAND and SILT.	0.7	COMP-8910-Fill	
15	1							
16	1							
17	6							
18								
19	2	24/9			Grey SILT and CLAY, little fine sand.	0.1		
20	1							
21	1							
22	WOR	24/22			Grey SILT and CLAY, little fine sand.			
23	WOH							
24	2							
25	2							
26	WOH	24/24				0.0	COMP-8910-Native	
	WOH							
	WOH							
	2				End of Boring @ 26 feet-terminated			

Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-201**
Monitor Well ID No.: **MW-201**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.2 feet	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 10.0 feet below ground surface	Dated Drilled:	5/12/2016
Depth to Static Water:		Drill Type:	Hollow Stem Auger
Stabilization Time:		Sampling Method:	Continuous
Blow Count Info	**Notes:**	Drill Rig and Model Number:	Truck / Diedrich D 120
Type: SPT	HS = Headspace PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF =	Drilling Company:	New England Boring Contractors
Hammer: 140 lbs	1.0)	Driller's Name:	Norm and Shawn
Fall: 30 inches		TRC Representative:	C. Ragnelli / L. Hopp

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
-3 to 0							
1	NA					0 - 6": Topsoil (grass)	Native Fill 0.0-2.0'
2							
3	NA					Advanced vac-rig to 6' below ground surface	Bentonite -2.0-3.0' (1' thickness)
4							
5	NA						Seven (7) Feet 2" Schedule 40 PVC Riser (-)2-5'
6							
7	B/MW 201 (6-8') Submitted for Total Metals, Dissolved Metals, EPH-10, hold SPLP	5,5,7,6	0.5	S-1	24/7	6-8': Dry black f-c SAND, trace f gravel, fill (brick 5%, coal slag 5%)	Filter Sand Pack 3-20' (17' thickness)
8							
9	NA	4,3,2,4	0.0	S-2	24/9	8-10': Moist, brown f-c SAND, trace f gravel, fill (klinkers 40%)	
10							Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 5-20'
11	B/MW 201 (10-12') Submitted for Total Metals, Dissolved Metals, EPH-10, hold SPLP, Collected DUP-1	4,6,15,13	7.0	S-3	24/11	10-12': Moist to wet black f-c SAND, some f gravels, fill (brick 20%, klinkers 20%)	
12							
13	NA	23,13,14,10	47.7	S-4	24/16	12-14': Wet black f-c SAND (50%) and FILL (klinkers 3%, brick 20%) trace f gravel Staining and odor	
14							
15	NA	5,4,3,4	54.4	S-5	24/8	14-16': Wet black f-c SAND and FILL (brick 20%, klinkers 30%), trace f gravel, trace silt Staining and odor	
16							
17	NA	6,3,4,4		S-6	24/9	16-18': Wet black f-c SAND and FILL (brick 20%, klinkers 30%), trace f gravel Staining and odor	
18							
19	NA		60.3 20.8	S-7	24/13	18-20': 7": Wet brown to grey f-c SAND, trace f gravel, little silt 6": Wet black f-c SAND and SILT	
20							

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

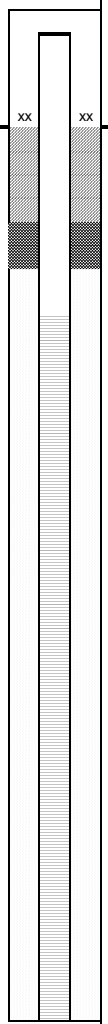
Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-202**
Monitor Well ID No.: **MW-202**
Sheet 1 of 1

Boring Location:	N: 15350438.4477 E: 1108914.0582	Project Number:	140143.0000.7478
Ground Elevation:	12.0 feet	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 10.0 feet below ground surface	Dated Drilled:	5/11/2016
Depth to Static Water:		Drill Type:	Hollow Stem Auger
Stabilization Time:		Sampling Method:	Continuous
Blow Count Info	**Notes:**	Drill Rig and Model Number:	Truck / Diedrich D 120
Type: SPT	HS = Headspace PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF =	Drilling Company:	New England Boring Contractors
Hammer: 140 lbs	1.0)	Driller's Name:	Norm and Shawn
Fall: 30 inches		TRC Representative:	C. Ragnelli / L. Hopp

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
1						0-6": Topsoil (grass, dirt)	Native Fill 0.0-2.0'
2-3	NA	8,8,10,22	2.6	S-1	24/20	1-3' 4": Dry, topsoil (roots) 6": Dry brown to black f-c SAND, little f gravel, little fill (bricks 10%, very f coal slag 5%)	Bentonite -2.0.-3.0' (1' thickness)
4-5	NA	20,19,20,22	0.3 0.0	S-2	24/22	3-5' Dry, organics, roots Dry black f-m SAND, trace f gravel, FILL (very f coal slag 80%) Dry tan very f SAND, trace silt, trace f gravel	Six (6) Feet 2" Schedule 40 PVC Riser (-)2-4'
6-7	B/MW 202 (5-7') Submitted for Total Metals, Dissolved Metals, EPH-10, SPLP Metals	9,9,6,4	0.2	S-3	24/15	5-7': 3": Dry black f-c SAND, trace FILL (very f coal slag 5%) 3": Dry brown to grey f-c SAND, trace f gravel 3": Dry grey CLAY, little f-m sand 6": Dry brown reddish f-c SAND	
8-9	NA	5,4,5,4	2.7	S-4	24/13	7-9': Dry brown f-c SAND, trace f gravel	Filter Sand Pack 3-19' (16' thickness)
10-11	B/MW 202 (9-11') Submitted for Total Metals, Dissolved Metals, EPH-10, SPLP Metals	4,4,5,5	0.2	S-5	24/12	9-11': Moist, wet brown f-c SAND	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 4-19'
12-13	NA	2,4,4,5	3.2	S-6	24/15	11-13': Wet brown f-c SAND, trace f gravel	
14-15	NA	4,10,38,43	0.2	S-7	24/17	13-15': Wet brown f-c SAND, trace f gravel, trace silt	
16-17	NA	5,3,7,18	0.5 0.8	S-8	24/20	15-17' 10": Wet brown f-c SAND 5": Wet grey f SILTY SAND	
18-19	NA	1/12",3,4		S-9	24/12	17-19': Wet brown f-c SAND, trace silt	
20-21	NA	6,21,61,66	0.8 0.4	S-10	24/24	19-21' 18": Wet brown f-c SAND, trace f gravel 4": Wet CLAY with some silt 2": Wet brown f-c SAND	



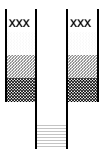
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-203**
Monitor Well ID No.: **MW-203**
Sheet 1 of 1

Boring Location:	N: 15350425.3168 E: 1108966.7489	Project Number:	140143.0000.7478
Ground Elevation:	12.2 feet	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 10.0 feet below ground surface	Dated Drilled:	5/11-12/2016
Depth to Static Water:		Drill Type:	Hollow Stem Auger
Stabilization Time:		Sampling Method:	Continuous
Blow Count Info	**Notes:**	Drill Rig and Model Number:	Truck / Diedrich D 120
Type: SPT	HS = Headspace PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0)	Drilling Company:	New England Boring Contractors
Hammer: 140 lbs		Driller's Name:	Norm and Shawn
Fall: 30 inches		TRC Representative:	C. Ragnelli / L. Hopp

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
0						0-4": Topsoil (grass, dirt)	Native Fill 0.0-2.0'
2	NA	8,26,29,26	0.2	S-1	24/18	1-3' 14": Dry black f-c SAND, trace f gravel FILL (brick 10%, coal slag 5%) 4": Dry SILTY SAND, trace f gravel	
3			0.1				Bentonite -2.0.-3.0' (1' thickness)
4	NA	9,8,12,9	0.2	S-2	24/15	3-5': Dry black f-c SAND, FILL (brick 10%, kinkers 10%)	
6	B/MW 203 (5-7') Submitted for Total Metals, Dissolved Metals, EPH-10, SPLP Metals	7,6,5,4	0.2	S-3	24/7	5-7': Dry brown to black f-c SAND, trace f gravel, fill (coal slag 20%)	Six (6) Feet 2" Schedule 40 PVC Riser (-)2-4'
8	NA	8,4,5,5	0.4	S-4	24/7	7-9': Dry brown to black f-c SAND, trace f gravel, fill (klinkers 20%, brick 20%)	Filter Sand Pack 3-19' (16' thickness)
10	B/MW 203 (5-7') Submitted for Total Metals, Dissolved Metals, EPH-10, SPLP Metals	9,14,10,9	0.1	S-5	24/12	9-11' 10": Wet black f-c SAND, trace f gravel, fill (brick 5%, klinkers 10%) 2": Wet fine GRAVEL	
11			0.1				Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 4-19'
12	NA	2,10,6,7	6.7	S-6	24/9	11-13' 7": Wet black f-c SAND, trace f gravel, trace silt, FILL (brick 5%, klinker 5%) 2": Wet f SAND, trace silt	
13			4.5				
14	NA	1,1/12,1	0.5	S-7	24/2	13-15': Wet black f-m SAND	
16	NA	4,3,2,4	0.6	S-8	24/8	15-17': Wet black grey f-c SAND, trace f gravel, trace silt	
18	NA	6-100/5	6.1	S-9	24/12	17-19': Wet black-grey f-c SAND, trace f gravel, trace silt	
20	NA	14-10-5-7	8	S-10	24/13	19-21' 3": Wet black f-c SAND, trace silt, trace f gravel 5": Wet black f-c SAND, some f gravel (30%), some wood (organics) 5": Wet brown f- SAND, little silt	
21			36.7				

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-204**
Monitor Well ID No.: **MW-204**
Sheet 1 of 1

Boring Location:	N: 15350381.9915 E: 1109125.3309	Project Number:	140143.0000.7478
Ground Elevation:	12.9 feet	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 10.0 feet below ground surface	Dated Drilled:	5/10/2016
Depth to Static Water:		Drill Type:	Hollow Stem Auger
Stabilization Time:		Sampling Method:	Continuous
Blow Count Info	**Notes:**	Drill Rig and Model Number:	Truck / Diedrich D 120
Type: SPT	HS = Headspace PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0)	Drilling Company:	New England Boring Contractors
Hammer: 140 lbs		Driller's Name:	Norm and Shawn
Fall: 30 inches		TRC Representative:	C. Ragnelli / L. Hopp

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								
1	NA					0 - 4": Topsoil (grass)	Native Fill 0.0-2.0'	
3	NA					Advanced vac-rig to 6' below ground surface	Bentonite -2.0-3.0' (1' thickness)	
5	NA						Seven (7) Feet 2" Schedule 40 PVC Riser (-)2-5'	
7	B/MW 204 (6-8') Submitted for Total Metals, Dissolved Metals, EPH-10, hold SPLP	12,9,13,16	0.6	S-1	24/16	6-8': 8": Dry dark f-m SAND, little f gravel, trace silt 8": FILL (coal slag 75%, brick 25%)	Filter Sand Pack 3-20' (17' thickness)	
9	B/MW 204 (8-10') Submitted for Total Metals, Dissolved Metals, EPH-10, hold SPLP	6,5,7,6	0.1	S-2	24/24	8-10': 6": Moist brown f SAND, trace silt 18": Wet dark brown f SAND	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 5-20'	
11	NA	2,1,1,3	0.1	S-3	24/24	10-12': Wet dark brown f SILTY SAND		
13	NA	2,1,1,1	0.6 0.4	S-4	24/18	12-14' 5": Wet black m-c SAND, trace silt 13": Wet dark brown SILTY SAND		
15	NA	1,5,3,4	10.0 21.5	S-5	24/14	14-16': 7": Wet dark brown f-c SAND and SILT, trace fill (brick 5%) 7": Wet dark brown f-c SAND and f GRAVEL, and FILL (coal slag, 20%, bricks 40%)		
17	NA	4,4,3,4	0.5	S-6	24/10	16-18': Wet dark brown f-c SAND, fill (klinkers 5-10%), trace silt		
19	NA	5,3,5,17	26.2	S-7	24/8	18-20': Wet dark brown f-c SAND, little silt		

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

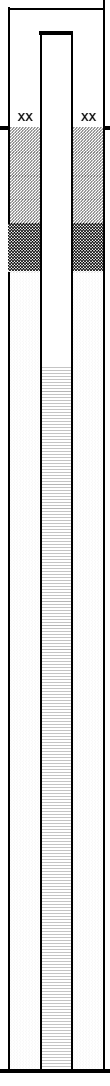
Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-205**
Monitor Well ID No.: **MW-205**
Sheet 1 of 1

Boring Location:	N: 15350260.6793 E: 1109014.1582	Project Number:	140143.0000.7478
Ground Elevation:	14.4 feet	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 10.0 feet below ground surface	Dated Drilled:	5/12/2016
Depth to Static Water:		Drill Type:	Hollow Stem Auger
Stabilization Time:		Sampling Method:	Continuous
Blow Count Info	**Notes:**	Drill Rig and Model Number:	Truck / Diedrich D 120
Type: SPT	HS = Headspace PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0)	Drilling Company:	New England Boring Contractors
Hammer: 140 lbs		Driller's Name:	Norm and Shawn
Fall: 30 inches		TRC Representative:	C. Ragnelli / L. Hopp

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
-3 to 0							
1	NA					0 - 6": Topsoil (grass)	Native Fill 0.0-2.0'
2							
3	NA					Advanced vac-rig to 6' below ground surface	Bentonite -2.0-3.0' (1' thickness)
4							
5	NA						Seven (7) Feet 2" Schedule 40 PVC Riser (-)2-5'
6							
7	B/MW 205 (6-8)' Submitted for Total Metals, Dissolved Metals, EPH-10, hold SPLP	12,12,18,16	0.6 / 0.0	S-1	24/15	6-8' 3": Dry black f-m SAND 12": Dry light brown f-m SAND, trace f gravel	Filter Sand Pack 3-20' (17' thickness)
8							
9	NA	8,14,13,13	0.0	S-2	24/20	8-10": Dry black-brown f-m SAND and SILT, fill (brick 5%, coal salg 5%	
10							Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 5-20'
11	B/MW 205 (10-12)' Submitted for Total Metals, Dissolved Metals, EPH-10, hold SPLP	7,6,7,6	0.0	S-3	24/22	10-12': Moist to wet black SILTY SAND	
12							
13	NA	8,9,6,6	2.1 / 0.8	S-4	24/12	12-14' 4": Wet grey-black f-m SAND and SILT 8": Wet brown f-c SAND, trace silt, trace f gravel	
14							
15	NA	11,4,4,5	0.0 / 0.2	S-5	24/15	14-16' 2": Wet brown f-c SAND and SILT 13": Wet brown f-c SAND, little f gravel	
16							
17	NA	5,4,410	1.2	S-6	24/13	16-18': Wet grey f-c SAND and SILT, trace f gravel	
18							
19	NA	2,2,3,3	0.4	S-7	24/8	18-20': Wet grey f-c SAND and f SILT, trace f gravel	
20							



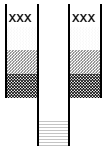
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-300**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	11.59'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		NA	S-1	60/0	No Recovery 0-5 ft		1
5	S-2 5-10 ft.		0.0	S-2	60/42			5
6						14 " Dark Brown Silt and organic topsil, trace roots and grass (reworked from 0-5 ft but recovered in this liner)		6
7			0.0					7
8						20 " Tan fine to medium SAND		8
9			0.0					9
10								10
11	S-3 10-15 ft.		0.0					11
12					60/46	46 " Tan fine to Medium SAND, trace fine gravel		12
13			0.0					13
14								14
15								15
16								16
17	S-4 15-20 ft.		0.0		60/36	30" Tan fine to medium SAND moist at 11 ft.Wet at 12 ft.		17
18						6 " Gray SILT some fine sand. No odors stain or PID readings		18
19			0.0					19
20						EOB 20 ft.		20

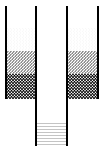
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

TRC

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-301**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.7'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		NA	S-1	60/0	No Recovery 0-5 ft		1
2 to 4								2 to 4
5	S-2 5-10 ft.		0.0	S-2	60/36			5
6						4 " Dark Brown SILT and organic topsoil, trace roots and grass (reworked from 0-5 ft but recovered in this liner) some fine Sand trace fine Gravel		6
7			0.0					7
8						32 " Dark Brown to Tan and Black SLAG, traces of yellow fire brick Pulverized (FILL)		8
9								9
10			0.0					10
11	S-3 10-15 ft.		0.0		60/30	6" SAA moist		11
12								12
13			OS= 4.7, HS = 20.8			14 " Black Oil Stained fine to medium SAND. Wet		13
14								14
15			OS= 0.4			10 " Grey fine SAND Saturated. (water) Mild odor no staining		15
16						EOB 15 ft		16
17 to 20								17 to 20

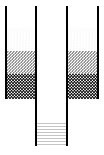
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-302**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.55'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		0.0	S-1	60/30	6" Gray organic topsoil roots and grass. Some Silt Some fine SAND trace fine Gravel		1
2 to 4			0.0			24" Tan fine to Medium SAND, some fine gravel Pulverized		2 to 4
5	S-2 5-10 ft.							5
6						20" Tan fine to Medium SAND, Some uniform Grained very fine SAND		6
7 to 8			0.0	S-2	60/28			7 to 8
9			0.0			8" Black uniform grained fine SAND (coal dust?)		9
10								10
11	S-3 10-15 ft.		0.0			50 " Tan Fine to Medium SAND, Wet at 12 ft. Saturated at 13 ft. no odor no staining		11
12 to 13			0.0		60/50			12 to 13
14 to 15								14 to 15
16						EOB 15 ft		16
17 to 20								17 to 20

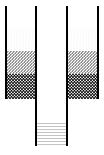
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-303**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.48'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
0 to 1	S-1 0-5 ft.		0.0	S-1	60/14	14" Gray to organic topsoil roots and grass.		0 to 1
5 to 6	S-2 5-10 ft.		0.1	S-2	60/40	4" Gray organic SILT 30" Red to Rusty Colored fine to coarse FILL, Slag Coal, Ash Bricks.		5 to 6
9 to 10			0.3			6" Red to Rusty Colored fine to coarse FILL, Slag Coal, Ash Bricks, moist		9 to 10
10 to 11	S-3 10-15 ft.		HS=20.1		60/42	6" Red to Rusty Colored fine to coarse FILL, Slag Coal, Ash Bricks, moist 2 " Black oily saturated FILL, thin oil layer (2 "), mild odor and staining		10 to 11
12 to 13			OS= 4.0 to 5.9			14 " Black Stained fine SAND and SILT, saturated with water, mild odor and staining		12 to 13
14 to 15			OS =3.7 to 1.1			20 " Tan Fine SAND and SILT, saturated with water, no odor or staining		14 to 15
15 to 16						EOB 15 ft		15 to 16
16 to 20								16 to 20

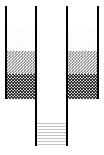
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-304**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.68'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
0								0
1	S-1 0-5 ft.		0.0	S-1	60/38	14" Gray to black fine SAND and SILT trace fine Gravel trace organic root matter.		1
2						24 " Tan fine SAND , trace fine Gravel (fill)		2
3								3
4								4
5	S-2 5-10 ft.							5
6						16 " Tan fine SAND , some fine Gravel (fill)		6
7			0.1	S-2	60/36	6" Black fine SAND and SILT, some fine gravel (fill), .		7
8								8
9			0.3			14" Red Brick colored and stained SLAG, Coal, Ash, some larger chunks orange SLAG		9
10								10
11	S-3 10-15 ft.		OS= 0.6			10 " Black SLAG fill, moist		11
12								12
13			OS= 0.8		60/30	20 " Oil stained SLAG saturated zone of oil and coincident with the water table. Oil globules mild odor significant staining		13
14								14
15			OS =1.1, HS = 17.8			Headspace at ~ 14 ft.		15
16								16
17	S-4 15-20		0.3		60/20	16" SLAG, Coal Brick Fill Saturated (water)		17
18						4 " Gray SILT some Fine SAND		18
19								19
20						EOB 20 ft		20

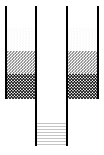
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-305**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.82'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0), Boring	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic	completed in VP-2 pre-cleared location	TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		0.0	S-1	60/30	10" Black fine to medium SAND, trace Silt trace fine gravel 20" Tan fine to medium SAND		1
5	S-2 5-10 ft.		OS=0.1 OS= 0.2	S-2	60/40	18" Tan fine -medium SAND 22" Black coal SLAG some ash and coal, trace fine sand, trace fine gravel (fill).		5
11	S-3 10-15 ft.		OS= 0.1 OS =4.1, HS = 49.5 OS =1.1		60/42	14 " Black coal SLAG some ash and coal, trace fine gravel (fill), Dry 28 " Black Oil stained and saturated SLAG (fill) coincident with the water table. Highest readings and headspace taken ~ 14 ft		11
17	S-4 15-20		OS =2.2, HS = 14.6		60/24	24" SLAG, loose saturated with oil. No native soil was recoverd at depth due to collapse of loose materials at depth. Stained with oil and in the water table. EOB 20 ft		17

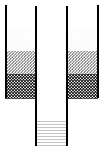
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-306**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.67'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0), Boring	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic	completed in VP-3 in pre-cleared location	TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		OS=0.2	S-1	60/28	10" Gray fine SAND some Silt, some fine Gravel, (loose)		1
2 to 4						18" Black to Rusty colored SLAG, glass, some fine to coarse SAND, little fine Gravel		2 to 4
5	S-2 5-10 ft.							5
6 to 7			OS=0.1	S-2	60/36	4 Red Bricks (Fill)		6 to 7
8 to 9								8 to 9
10			OS= 0.2			32" Black coal SLAG some ash and coal, trace concrete rubble, some fine gravel (fill).		10
11	S-3 10-15 ft.					10" Black coal SLAG some ash and coal, trace fine gravel (fill), Dry		11
12 to 13			OS =3.8; HS = 116		60/48	28 " Black coal SLAG ash and rubble, Oil stained and saturated, odor and sheen. Oil saturation appx 11.8 to 14.8 ft. (~ 3 ft)		12 to 13
14						4" Gray very Fine SAND, some Silt, Wet		14
15						Highest readings and headspace taken ~ 14 ft		15
16						EOB 15 ft		16
17 to 19								17 to 19
20								20

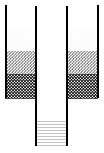
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-307**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.32'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
0	S-1 0-5 ft.		OS=0.0	S-1	60/24	8" Black fine SAND some Silt, organic topsoil roots and grass, (loose) 16" Tan fine to medium SAND, trace fine gravel (rounded), trace Silt.		0
5	S-2 5-10 ft.		OS=0.0	S-2	60/40	40" Tan Fine to medium SAND trace fine gravel (rounded)		5
10	S-3 10-15 ft.		OS=0.0	S-3	60/44	44" Tan Fine to medium SAND, trace fine gravel, Wet at 12.5 ft., Saturated to 15 ft Highest readings and headspace taken ~ 14 ft EOB 15 ft		10
15 to 20								15 to 20

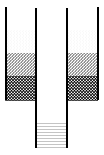
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-308**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.32'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		NA	S-1	60/0	No recovery 0-5		1
2 to 4								2 to 4
5	S-2 5-10 ft.							5
6			OS=0.0	S-2	60/32	6" Reworked organic topsoil (sluff from -0-5)		6
7 to 8						16" Black to Tan SLAG, trace fine Gravel trace fine SAND		7 to 8
9 to 10						10 " Tan fine SAND, some SILT, trace fine Gravel (rusty laminations around 10 ft)		9 to 10
11	S-3 10-15 ft.							11
12			OS=0.0	S-3	60/46	10" Tan Fine SAND, some fine gravel, trace Silt trace fine gravel		12
13 to 14						36 " Tan Fine to Medium SAND, Wet at 12.5 ft. Saturated to 15 ft No Odors or staining		13 to 14
15						EOB 15 ft		15
16 to 20								16 to 20

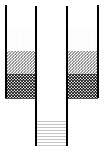
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-309**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	14.26'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
0								0
1	S-1 0-5 ft.		OS=0.0	S-1	60/14	6" Topsoil Silt roots and grass, some fine Sand disturbed / reworked 8" Loose Tan fine SAND		1
2								2
3								3
4								4
5	S-2 5-10 ft.		OS=0.1					5
6						30" Tan Fine SAND trace fine Gravel		6
7			OS=0.2	S-2	60/48			7
8						18" Black coal SLAG, trace fine Gravel trace fine SAND		8
9								9
10								10
11	S-3 10-15 ft.		0.4 to 1.2					11
12						18" Black coal SLAG, trace fine Gravel, trace fine SAND, moist on bottom		12
13			HS= 47.7	S-3	60/46	18 " Oil Saturated SLAG fill (SAA) stained with sheen and odor at water table		13
14								14
15						Headspace ~ 14 ft.		15
16								16
17	S-4 15-20 ft.			S-4		4 " Oil Saturated SLAG fill (SAA) stained with sheen and odor at water table 16 " Gray fine SAND stained and globules of oil throughout, saturated 10 " Gray Fine SAND, some silt saturated.		17
18						Fill terminated around 15.5 ft.		18
19								19
20						EOB 20 ft		20

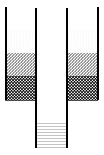
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-310**
Monitor Well ID No.: **MW-206**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.1'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
-3 to 0							Steel standpipe w/locking cover
0 to 5	S-1 0-5 ft.		OS=0.0	S-1	60/16	16" loose organic topsoil roots and grass, some Silt some fine gravel reworked	Concrete Pad; Native Fill 1.0-2.0'; Bentonite -2.0.-3.0' (1' thickness)
5 to 10	S-2 5-10 ft.		OS=0.0	S-2	60/36	2" pulverized Concrete (fill) 34" Tan Fine to medium SAND, some silt, trace fine gravel	Six (12) Feet 2" Schedule 40 PVC Riser 0 to 9 ft (plus 2 ft Ags)
10 to 15	S-3 10-15 ft.		OS=0.0, HS=0.8	S-3	60/38	4" Tan Fine to medium SAND, some silt, trace fine gravel 12 " Black fine SAND, uniform grain size (coal dust?) dry. 4" Brown to tan fine SAND Silt Moist to wet. 18" Brown to Tan Silt some fine SAND Saturated Headspace taken ~ 14 ft EOB 15 ft	Filter Sand Pack 3-19ft (16' thickness) Ten (10) Feet 2" Schedule 40 0.01 Slotted Screen 9-19'

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-311**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.58'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.		OS=0.0	S-1	60/36	36" Tan Fine to medium SAND, trace fine Gravel		1
2 to 4								2 to 4
5	S-2 5-10 ft.		OS=0.0					5
6						12" Tan Fine to medium SAND, trace fine Gravel		6
7			OS=0.2	S-2	60/48	18" Dark gray SILT and Clay, traces of slag and ash (fill)		7
8 to 9						18" Dark Brown to Black ash and cinders		8 to 9
10								10
11	S-3 10-15 ft.		OS= 0.2			12" Dark Brown to Black ash and cinders, moist at the bottom		11
12						4 " Grey Silt moist		12
13			OS= 4.7, HS= 32.7	S-3	60/42	26 " Oil Saturated and stained SLAG fill, trace fine gravel in shoe		13
14 to 15			OS=2.5			Headspace ~ 12.5 ft. in highest OS reading zone		14 to 15
16						18" Oil Saturated SLAG and Silty SAND Sheen and odor in water table		16
17	S-4 15-20 ft.		OS=3.6, HS=20.6	S-4	60/28			17
18						10 " Gray fine SAND some Silt, staining and odor, saturated		18
19								19
20						EOB 20 ft		20

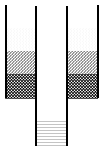
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-312**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.12'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
0 to 5	S-1 0-5 ft.		OS=0.0	S-1	60/10	10" Organic topsoil grass and roots loose, disturbed		0 to 5
5 to 10	S-2 5-10 ft.		OS=0.0 OS=0.4	S-2	60/56	26" Tan Fine to medium SAND, trace fine Gravel 30" Black SILT and SLAG, coal, Ash, Brick (fill)		5 to 10
10 to 15	S-3 10-15 ft.		OS= 0.3 OS= 5.3; HS= 40.9	S-3	60/40	14" Black SILT and SLAG, coal, Ash, Brick (fill), moist at the bottom 26 " Oil Saturated (globules) and stained SLAG fill, water saturated Headspace ~ 12.5 ft. in highest OS reading zone		10 to 15
15 to 20	S-4 15-20 ft.		OS=4.2 HS=20.1	S-4	60/20	20" loose SLAG with oily saturation, collapsed? No native horizon observed Heaspace at around 18 ft based on recovery EOB 20 ft		15 to 20

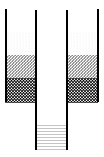
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-313**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.91'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
0								0
1	S-1 0-5 ft.		OS=0.0	S-1	60/48	14" Organic topsoil silt grass and roots loose, some fine gravel disturbed		1
2								2
3			OS=0.0			34" Tan Fine to medium SAND		3
4								4
5	S-2 5-10 ft.		OS=0.0					5
6						24" Tan Fine to medium SAND,		6
7			OS= 0.0	S-2	60/56	32" Black SLAG, multicolored, some fine to coarse SAND, trace fine Gravel		7
8								8
9								9
10								10
11	S-3 10-15 ft.		OS= 0.4			16" Tan Fine to medium SAND, trace fine Gravel		11
12								12
13			OS= 4.2, HS= 55.2	S-3	60/40	30" Oily saturated Fine to medium SAND, saturated		13
14						2" Black SILT		14
15			OS=2.6			Headspace ~ 14 ft. in highest OS reading zone		15
16								16
17	S-4 15-20 ft.		OS=2.3	S-4	60/10	No true recovery all loose sluff / collapse of loose slag.		17
18						Native horizon noted at 14.8 ft (14 ' 10 ")		18
19								19
20						EOB 20 ft		20

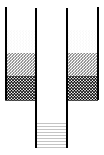
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-314**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.97'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
0 to 5	S-1 0-5 ft.		OS=0.0 OS=0.0	S-1	60/28	6" Brown Organic topsoil silt grass and roots loose, reworked 22" Tan Fine to medium SAND		0 to 5
5 to 10	S-2 5-10 ft.		OS=0.0 OS= 0.2 OS=0.0	S-2	60/56	8" Tan Fine to medium SAND, 4" Pulverized white gravel 6" Black Slag, coal, some fine Sand and gravel 16" Black organic SILT,		5 to 10
10 to 15	S-3 10-15 ft.		OS=0.0 OS=0.0 OS=0.0	S-3	60/38	8" Black organic SILT, 24" Tan Fine to medium SAND, trace fine Gravel, wet 6" Gray SILT , some Clay saturated EOB 15 ft		10 to 15
15 to 20								15 to 20

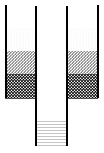
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-315**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.36'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore		Drilling Company:	New England Geotech
Hammer: GH-60		Driller's Name:	Hayes Rebijas
Fall: 60 inch pneematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
0–1	S-1 0-5 ft.		OS=0.0	S-1	60/16	16" Dark Brown Organic SILT grass and roots loose, reworked		0–1
5–6	S-2 5-10 ft.		OS=0.0	S-2	60/36	34" SLAG, Black to rusty colored, Bricks ,Ash		5–6
7–8			OS=0.0					7–8
9–10			OS=0.0			2" Black fine SAND		9–10
10–11	S-3 10-15 ft.		OS=0.0	S-3	60/40	6" Black fine SAND, some Slag		10–11
12–13			OS=0.4			24" Gray SILT some Clay, wet at the top (perched?) moist throughout		12–13
14–15			OS=0.1			10" Black SLAG saturated.		14–15
15						EOB 15 ft		15
16–20								16–20

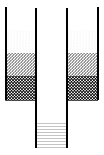
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-317**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.66	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
0								0
1	S-1 0-5 ft.		OS=0.0	S-1	60/18	8" Blackish organic Topsoil Roots and grass (disturbed)		1
2								2
3						10" Tan Fine to medium SAND		3
4								4
5			OS=0.0					5
6						24" Tan Fine to medium SAND, trace fine Gravel		6
7	S-2 5-10 ft.		OS=0.2	S-2	60/50			7
8						26" Black fine SAND (Coal dust?) Black Slag and pulverized Slag (fill)		8
9								9
10								10
11	S-3 10-15 ft.		OS= 0.4	S-3	60/28	4" Dark Brown to Black ash and cinders, moist at the bottom		11
12						4 " White pulverized Gravel		12
13			OS= 1.6, HS= 97.3			16 " Oil Saturated SLAG fill and Oil Stained fine SAND wet		13
14						4" Grey SILT		14
15			OS=0.2			Headspace ~ 12.5 ft. in highest OS reading zone		15
16						EOB 15 ft		16
17								17
18								18
19								19
20								20

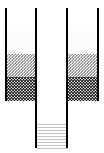
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-318**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	12.98'	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
0								0
1	S-1 0-5 ft.		OS=0.0	S-1	60/28	8" Brown organic topsoil trace bricks trace fine to coarse SAND, trace fine gravel (disturbed)		1
2								2
3						20" Black Slag and coal, yellow and orange fire brick pulverized		3
4								4
5								5
6								6
7	S-2 5-10 ft.		OS=0.0	S-2	60/32	32 " Orange SLAG		7
8								8
9								9
10								10
11	S-3 10-15 ft.		OS= 0.2			8 " Orange SLAG		11
12						6" Oily SILT and Slag Saturated (water)		12
13			OS= 0.8; HS= 22.1	S-3	60/38	24 " Tan Fine to Medium SAND, saturated		13
14						4" Grey SILT		14
15			OS=0.2			Headspace ~ 12.5 ft. in highest OS reading zone EOB 15 ft		15
16								16
17								17
18								18
19								19
20								20

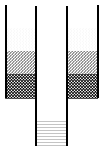
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-319**
Monitor Well ID No.: **NA**
Sheet 1 of 1

Boring Location:	N: 15350345.3936 E: 1108827.8344	Project Number:	140143.0000.7478
Ground Elevation:	13.34	Project Manager:	Ryan Niles
Depth to First Water:	Approximately 12 feet below ground surface	Dated Drilled:	10/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	6620 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 3000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1	S-1 0-5 ft.			S-1	60/0	0-5 No Recovery (pushed cobble) (disturbed)		1
2 to 5								2 to 5
6						6 " Brown organic topsoil roots and grass, trace fine to medium Sand, trace silt		6
7 to 10	S-2 5-10 ft.		OS=0.0	S-2	60/34	28 " Tan to Brown to Rusty colored SLAG. Fire brick, ash cinders, coal, some f gravel		7 to 10
11			OS= 0.0	S-3	60/46	10" Tan to Brown to Rusty colored SLAG. Fire brick, ash cinders, coal, some f gravel		11
12						30" Black Oil stained SAND (saturated from 12.5 to 15 ft.), mild odor		12
13	S-3 10-15 ft.		OS= 4.7 HS= 137.8			6 " Grey SILT some fine Sand, wet		13
14						4" Grey SILT		14
15			OS=0.2			Headspace ~ 12.5 ft. in highest OS reading zone EOB 15 ft		15
16						10" Mixed sluff - no true recovery		16
17	S-4		NA		60/10	(Attempted to confirm native materials at depth below fill , no recovery)		17
18						EOB 17 ft.		18
19 to 20								19 to 20

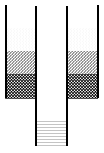
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-400**
Monitor Well ID No.: **MW-400**
Sheet 1 of 2

Boring Location:	N: 15350388.97' E: 1108946.22'	Project Number:	140143.0000.4903
Ground Elevation:	12.26'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)
0							
1-5			OS= 0.1 HS= 0.0	S-1	60/44	4" Organic topsoil, roots and grass, wet. 12" Brown fine to coarse SAND, some fine gravel, trace gravel, trace concrete. 28" Gray and Black fine to medium SAND, trace fine gravel, trace silt, wet.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)
6-10			OS= 0.0 HS= 0.0	S-2	60/26	26" fine BRICK, slag, coal, ash, cinders, dry.	Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness)
11-15	B400 (11.4') @ 1150 B400 (12.4') @ 1155			S-3	60/36	8" SLAG fall in and fine brick, dry. 18" SLAG fall in wet to saturated. 10" Dark brown to black fine to coarse SAND, some fine gravel, trace slag, saturated.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'
16-20			OS= 0.0 HS= 0.0	S-4	60/12	6" Grey silt, wet. 6" Fall in	

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-400**
Monitor Well ID No.: **MW-400**
Sheet 2 of 2

Boring Location:	see pg 1	Project Number:	140143.0000.4903
Ground Elevation:	12.26'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			OS= 0.0	S-5	60/38	38" Gray SAND and SILT, some clay layers.		21
22			HS= 0.0			End of boring @ 23', MW installed @ 23'.		22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

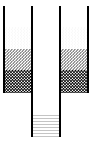
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



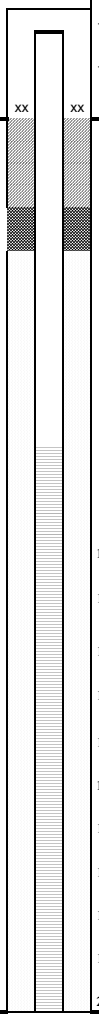
Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-401**
Monitor Well ID No.: **MW-401**
Sheet 1 of 2

Boring Location:	N: 15350313.21' E: 1108950.74'	Project Number:	140143.0000.4903
Ground Elevation:	13.44'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.1 HS= 0.0	S-1	60/40	6" Dark brown ORGANICS, topsoil, roots, grass and moss 8" Tan fine coarse SAND and fine GRAVEL, trace black silt. 28" Tan fine to medium SAND, dry.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
5							Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8'	5
6			OS= 0.0 HS= 0.0	S-2	60/50	30" Tan fine to medium SAND 8" Gray fine SAND 12" Black COAL, slag, dry.	Filter Sand Pack 3-23' (20' thickness)	6
10								10
11	B400 (11.5') @ 1100 B400 (12.2') @ 1110		OS= 0.0 HS= 0.4	S-3	60/28	16" Black COAL and SLAG, last 4" moist to wet. 12" Tan to brown fine to coarse SAND, saturated. No free oil.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 7.6-22.6	11
15								15
16			OS= 0.0 HS= 0.0	S-4	60/34	30" gray fine to medium SAND, some silt, saturated. 4" Gray CLAY, saturated.		16
20								20

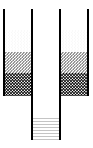


Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency		
0-4	Very Loose	0-2	Very Soft	Concrete
5-9	Loose	3-4	Soft	Silica Sand Pack
10-29	Med. Dense	5-8	M/Stiff	Native Fill
30-49	Dense	9-15	Stiff	Bentonite Seal
50+	Very Dense	16-30	Very Soft	Riser
		31+	Hard	Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-401**
Monitor Well ID No.: **MW-401**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.44'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			OS= 0.0 HS= 0.0	S-5	60/38	34" Gray fine to medium SAND, some silt, 4" gray clay, saturated.		21
22						End of boring @ 23', MW installed @ 23'.		22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

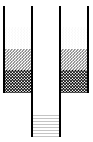
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



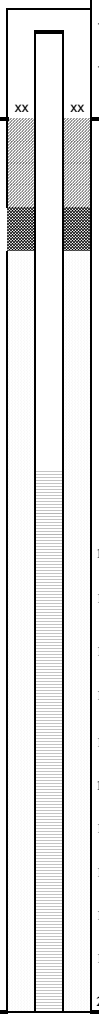
Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-402**
Monitor Well ID No.: **MW-402**
Sheet 1 of 2

Boring Location:	N: 15350228.45' E: 1108933.61'	Project Number:	140143.0000.4903
Ground Elevation:	14.62'	Project Manager:	Ryan Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0	S-1	60/44	6" Dark brown ORGANICS, top soil, roots, grass, moist. 18" Gray fine SAND, some silt, trace fine gravel, trace coal. 20" Tan fine to medium SAND.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
5			OS= 0.0 HS= 0.0	S-2	60/54	40" Tan fine to medium SAND 14" Black COAL, SLAG and COAL DUST, dry.	Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness)	5
10	B402 (11.6') @ 1010 B402 (12.2') @ 1015 B402 (12.8') @ 1020		OS= 0.2 HS= 20.1	S-3	60/44	10" Black COAL, SLAG and COAL DUST, dry. 14" Tan fine to coarse SAND, some fine gravel, moist. Bottom 4" mild odor, slight sheen. 20" Tan fine SAND, some silt,	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	10
15			OS= 0.0 HS= 0.0	S-4	60/8	8" Grey fine SAND and CLAY, some silt, wet.		15
20								20

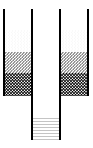


Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency		
0-4	Very Loose	0-2	Very Soft	Concrete
5-9	Loose	3-4	Soft	Silica Sand Pack
10-29	Med. Dense	5-8	M/Stiff	Native Fill
30-49	Dense	9-15	Stiff	Bentonite Seal
50+	Very Dense	16-30	Very Soft	Riser
		31+	Hard	Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-402**
Monitor Well ID No.: **MW-402**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	14.62'	Project Manager:	Ryan Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21								21
22								22
23			OS= 0.0 HS= 0.0	S-5	60/0	Boring end @ 20', MW installation @ 23'.		23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

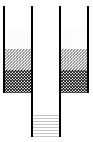
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



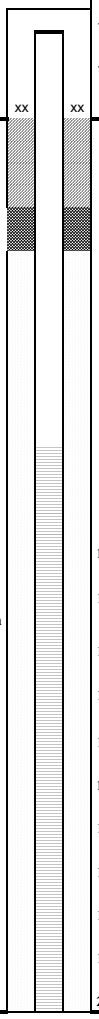
Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-403**
Monitor Well ID No.: **MW-403**
Sheet 1 of 2

Boring Location:	N: 15350183.12' E: 1108948.42'	Project Number:	140143.0000.4903
Ground Elevation:	13.11'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum cleared to 5'. 18" Medium to dark brown fine to medium SAND, some silt, trace gravel, no odor, no staining. 42" Medium to light brown, medium to coarse SAND, trace silt, no odor, no staining.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
5							Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8'	5
6			OS= 0.0 HS= 0.0	S-2	60/50	22" Tan fine to medium SAND 14" Black COAL dust, trace slag, trace brick. 8" Tan SILT and CLAY. 6" Tan fine to coarse SAND, moist.	Filter Sand Pack 3-23' (20' thickness)	6
10	B403 (10') @ 1305							10
11			OS= 0.0 HS= 0.0	S-3	60/36	30" Tan fine to coarse SAND, some gravel, saturated. 6" Black fine SAND and COAL DUST, no odor, no sheen.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	11
12	B403 (12') @ 1310							12
15								15
16			OS= 0.0 HS= 0.0	S-4	60/24	24" Black SLAG, CINDERS, ASH and COAL, saturated.		16
20								20



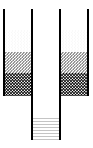
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-403**
Monitor Well ID No.: **MW-403**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.11'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			OS= 0.0 HS= 0.0	S-5	60/12	12" Black SLAG, CINDERS and COAL, saturated.		21
22								22
23								23
24								24
25								25
26			OS= 0.0 HS= 0.0	S-5	60/28	28" Black SLAG and FILL, saturated.		26
27						End of Boring @ 30', MW install @ 23'.		27
28								28
29								29
30								30
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

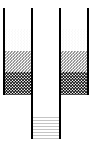
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



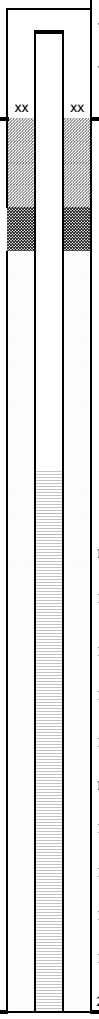
Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-404**
Monitor Well ID No.: **MW-404**
Sheet 1 of 2

Boring Location:	N: 15350179.6' E: 1108902.85'	Project Number:	140143.0000.4903
Ground Elevation:	13.06'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT & Truck Mounted CME 75
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3 to 0								-3 to 0
0 to 5			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum truck removed 0-5' 24" Brown fine to coarse SAND, some gravel, trace silt, no odor, no staining. 12" Medium brown fine to medium SAND, trace silt, no odor, no staining. 24" Medium to light brown fine to meidum SAND, no odor, no staining.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	0 to 5
5 to 10			OS= 0.0 HS= 0.0	S-2	60/46	6" Dark brown fine SAND, trace fine gravel. 20" Tan fine to medium SAND 20" Black COAL DUST (fine sand size).	Ten (10) Feet 4" Schedule 40 PVC Riser (-)2-5.4' Filter Sand Pack 3-23' (20' thickness)	5 to 10
10 to 15	B404 (11.4) @ 1350 B404 (12.0) @ 1400		OS= 1.0 HS= 12.3	S-3	60/36	6" Black COAL DUST 6" Black COAL, SLAG, ASH, CINDERS, moist oily sheen. 24" Black COAL, SLAG, ASH, CINDERS	Fifteen (15) Feet 4" Schedule 40 0.01 Slotted Screen 5.4-20.4'	10 to 15
15 to 20	B404 (16.7) @ 1410		OS= 0.2 HS= 1.3	S-4	60/26	16" COAL, SLAG, fill, saturated. 10" Brown fine to medium SAND, saturated.		15 to 20



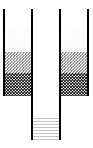
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-404**
Monitor Well ID No.: **MW-404**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.06'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			OS= 0.0	S-5	60/20	20" Brown to tan fine SAND, saturated.		21
22			HS= 0.0			End of Boring at 23', MW installed at 20.4'		22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

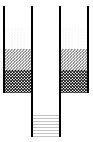
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-405**
Monitor Well ID No.: **MW-405**
Sheet 1 of 2

Boring Location:	N: 15350179.6' E: 1108839.99'	Project Number:	140143.0000.4903
Ground Elevation:	13.87'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum truck removed 0-5'. 24" Dark brown medium to coarse SAND, trace gravel, no odor, no staining. 36" Black fine to medium SAND, some silt, no odor, no staining.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
5			OS= 0.0 HS= 0.0	S-2	60/34	34" SLAG, COAL DUST, COAL, trace bricks, trace fine sand, moist near 10'.	Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness)	5
10	B405 (11.5) @ 1440 B405(12.5) @ 1450		OS= 0.1 HS= 0.0	S-3	60/38	16" SLAG, SANDY COAL DUST, COAL, trace bricks. 22" Tan fine to medium SAND, saturated, no oil observed.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 6.5 - 21.5	10
15			OS= 0.0 HS= 0.0	S-4	60/34	34" Tan fine to medium SAND, saturated.		15
20								20

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-405**
Monitor Well ID No.: **MW-405**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.87'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21						End of Boring @ 20', MW-405 installed at 21.5'.		21
22								22
23								3
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

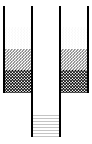
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



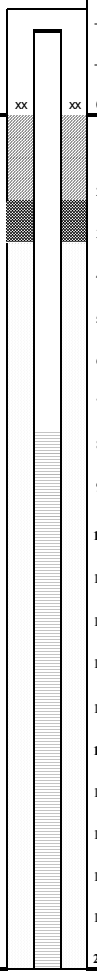
Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-406**
Monitor Well ID No.: **MW-406**
Sheet 1 of 2

Boring Location:	N: 15350227.18' E: 1108790.51'	Project Number:	140143.0000.4903
Ground Elevation:	13.34'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum truck removed 0-5'. 12" Dark brown to black, fine to medium SAND, little silt, trace gravel, no odor, no staining. 12" CONCRETE 24" Medium to coarse SAND and GRAVEL, SLAG, some brick, no odor, no staining. 12" Fine to coarse SAND and SILT, some gravel, no odor, no staining.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness) Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness) Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	5
10			OS= 0.0 HS= 0.1	S-2	60/28	28" Black COAL DUST, SLAG, traces ash and cinder.		10
15	B406 (11.8) EPH B406 (12.5) EPH + VPH		OS= 1.2 HS= 34.1 @ 11.5' OS= 40.0 HS= 155 @ 14.5'	S-3	60/40	10" Black COAL SLAG, oil saturated at 11.5 30" Fine to medium SAND with gray trace of silt/sand, saturated with oil globules.		15
20			OS= 14.3 HS= 88.7 @ 17.5'	S-4	60/30	30" Tan fine to medium SAND, oil stained, odorous, saturated.		20



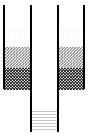
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-406**
Monitor Well ID No.: **MW-406**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.34'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21	B406 (21) - EPH		OS= 10.6 HS= 40.6 @ 21'	S-5	60/28	28" Tan fine to medium SAND, oil stained, saturated, odors.		21
22						End of Boring at 23', MW install at 23'.		22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

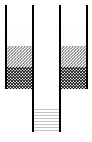
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-407**
Monitor Well ID No.: **MW-407**
Sheet 1 of 2

Boring Location:	N: 15350258.53' E: 1108742.7'	Project Number:	140143.0000.4903
Ground Elevation:	13.18'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/15/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample
0						
1			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum truck removed 0-5'. 24" Dark to medium brown, medium to coarse SAND, some gravel, no odor, no staining. 24" Dark brown to black fine to coarse SAND, some gravel, little silt, no odor, no staining. 12" Black fine to coarse SAND, little silt, no odor, no staining.
6			OS= 0.0 HS= 0.0	S-2	60/38	8" Brown to orange SLUFF, trace bricks. 6" Tan SILT, some fine sand, trace clay. 24" Tan fine to coarse SAND, trace fine gravel, moist @ bottom.
11	B407 (11.8) @ 1440 - EPH		OS= 1.4 HS= 30.6	S-3	60/40	10" Tan fine to medium SAND, trace fine gravel, moist @ bottom. 20" Black fine to medium SAND, odorous, oil stained.
12	B407 (12.8) @ 1450 - EPH		OS= 0.6 HS= 14.5			10" Grey fine to medium SAND, saturated.
16				S-4	60/38	16" Tan to grey fine to medium SAND, mild odor. 22" Tan fine to coarse SAND, saturated.
17	B407 (17.5) @ 1500 - EPH		OS= 0.0 HS= 4.8			

Well Construction (Stick-Up)

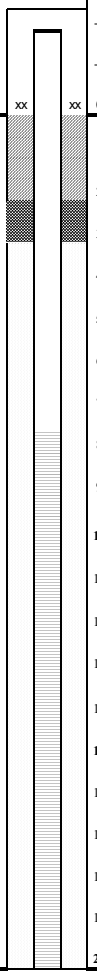
Quikrete 0-2' (2' thickness)

Bentonite -2.0.-3.0' (1' thickness)

Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8'

Filter Sand Pack 3-23' (20' thickness)

Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'



Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-407**
Monitor Well ID No.: **MW-407**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.18'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/15/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21						End of Boring @ 20', MW-407 to 23'.		21
22								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

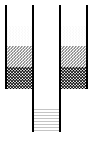
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-408**
Monitor Well ID No.: **MW-408**
Sheet 1 of 2

Boring Location:	N: 15350297.77' E: 1108760.42'	Project Number:	140143.0000.4903
Ground Elevation:	13.04'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample
0						
1-5			OS= 0.0 HS= 0.1 @ 5'	S-1	60/38	7" Dark Brown fine to coarse SAND with some silt and trace gravel 3" Wood 28" Dry FILL. Cinders, ash and fine to medium sand, klinkers.
6-10			OS= 0.0 HS= 0.1 @ 10'	S-2	60/34	14" Dry FILL. Cinders, ash and fine to medium sand, klinkers. 20 " FILL with crushed brick and cinders, klinkers.
11-15	B408 (11') @ 0850 - EPH B408 (15') @ 0855 - EPH		OS= 0.0 HS= 0.0	S-3	60/51	10" Red, moist FILL with klinkers and cinders 8" Black, FILL with cinders, ash and klinkers. 33" Olive green/brown, fine to medium SAND with some silt and coarse sand, trace subangular fine gravel,
16-20			OS= 0.0 HS= 0.0	S-4	60/20	20" Olive green/brown, fine to medium SAND with some silt and coarse sand, trace subangular fine gravel,

Well Construction (Stick-Up)

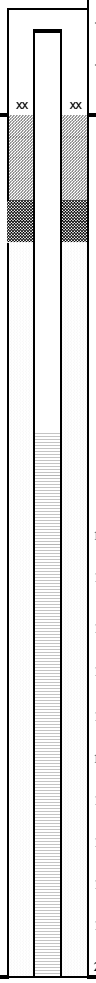
Quikrete 0-2'
(2' thickness)

Bentonite -2.0.-3.0'
(1' thickness)

Ten (10) Feet
2" Schedule 40
PVC Riser
(-)2-8'

Filter Sand Pack
3-23'
(20' thickness)

Fifteen (15) Feet
2" Schedule 40
0.01 Slotted Screen
8-23'



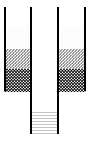
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-408**
Monitor Well ID No.: **MW-408**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.04'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21						End of Boring @ 20', MW-408 installed at 23'		21
22								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

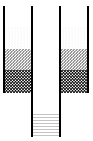
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-409**
Monitor Well ID No.: **MW-409**
Sheet 1 of 1

Boring Location:	N: 15350350.26' E: 1108779.22'	Project Number:	140143.0000.4903
Ground Elevation:	12.84'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 10 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0 @ 5'	S-1	54/33	6" SAND and SILT mix, moist, dark brown and black with some angular gravel. 27" Black, dry, FILL with cinders, ash, klinkers and crushed brick.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness) Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8'	1
6	B409 (10') @ 1515 - EPH		OS= 0.0 HS= 0.0 @ 10'	S-2	60/41	10" Dry, FILL, ash and cinders. 8" Crushed brick. 23" Cinders, ash and powdered coal.	Filter Sand Pack 3-23' (20' thickness) Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	6
11	B409 (11.5') @ 1520 - EPH		OS= 0.0 HS= 0.0 @ 15'	S-3	60/50	15" Black, wet, FILL, cinders, ash and crushed brick. 22" Fine SAND with silt, little clay, medium to coarse sand and fine gravel, bottom 2" crushed shale or coal fragment. 13" Brown, fine to medium SAND with some silt and sand, wet.		11
16			OS= 0.0 HS= 0.0 @ 20'	S-4	60/30	30" Oliver green/brown, fine to medium SAND with some silt and sand, trace subangular small gravel.		16
20								20

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-409**
Monitor Well ID No.: **MW-409**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	12.84'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 10 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21						End of boring @ 20', MW-409 installed at 23'.		21
22								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

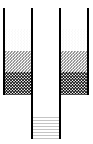
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

TRC		**Project:** 6 Bridge Street, Weymouth, MA	Boring ID No.: **B-410** Monitor Well ID No.: **MW-410** Sheet 1 of 2
Boring Location:	N: 15350382.09' E: 1108844.98'	Project Number:	140143.0000.4903
Ground Elevation:	12.45'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pnuematic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0								-3 to 0
1			OS= 0.0 HS= 0.0 @ 5'	S-1	54/33	6" Removed by shovel, not in core. 7" Moist, black, fine SAND with some silt. 26" Dark brown and black FILL with ash, cinders, and klinkers. Klinkers increase with depth. Some powdered coal at 6" to 10".	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness) Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness) Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	1
6			OS= 0.0 HS= 0.0 @ 10'	S-2	60/29	29" Dry, moist FILL (crushed brick, ash, and cinders).		6
11	B410 (11') @ 1430 - EPH B410 (12.5') @ 1435 - EPH B410 (14') @ 1440 - EPH		OS= 0.0 HS= 0.0 @ 15'	S-3	60/33	16" Moist, brick laden FILL with cinders, ash, and klinkers. 17" Wet, black FILL (cinders, ash, klinkers) with sheen. Heavy oil between 12"-30" of recovery.		11
16			OS= 0.0 HS= 0.0 @ 20'	S-4	60/29	29" Wet, olive green (darker on top and lighter on bottom), fine to coarse SAND, little silt and clay, trace small gravel.		16
20								20

Proportions Used
- 0-10% Trace
- 10-20% Little
- 20-35% Some
- 35-50% And

Change in Material Type

Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

- Concrete
- Silica Sand Pack
- Native Fill
- Bentonite Seal
- Riser
- Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **MW-410**
Monitor Well ID No.: **MW-410**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	12.45'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
21			OS= 0.0 HS= 0.0 @ 25'	S-5	60/37	37" Wet brown to dark brown fine to coarse SAND with some silt and little clay. Trace gravel at top. Lighter color with depth. End of boring @ 25', MW installed @ 23'.		21
##								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

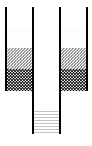
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



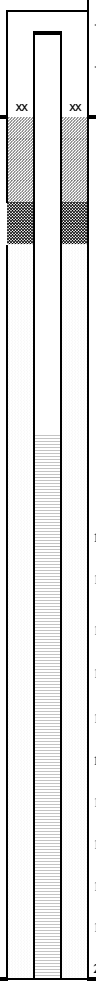
Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-411**
Monitor Well ID No.: **MW-411**
Sheet 1 of 2

Boring Location:	N: 15350378.39' E: 1108877.08'	Project Number:	140143.0000.4903
Ground Elevation:	12.53'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 9.5 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes: Offset 15' north from original boring because of access road**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
0							
1-5			OS= 0.0 HS= 0.0 @ 5'	S-1	54/36	6" Removed by shovel, not in core. 6" Moist dark brown/black fine to medium SAND with silt. Little coarse sand and small gravel. 30" FILL (cinders, ash, klinkers, and brick). Increased brick towards bottom.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)
6-10			OS= 0.0 HS= 0.0 @ 10'	S-2	60/31	25" red FILL (cinders, ash, klinkers, and brick). 6" Black moist to wet FILL (cinders, ash, klinkers, and brick).	Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness)
11-15	B411(11.5') @ 1325 - EPH B411(14') @1340 - EPH		OS= 0.0 HS= 14.1 @ 13'	S-3	60/47	13" Wet FILL (brown to red crushed brick with ash). 34" Wet, black FILL (ash, cinders and klinkers) with sheen. Bottom 4" viscous oil.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'
16-20	B411(16') @ 1335 - EPH		OS= 0.0 HS= 0.0 @ 16'	S-4	60/39	10" Wet FILL (ash, cinders, and klinkers) with sheen. 29" Wet, olive green, fine SAND with some silt, increasing silt with depth.	



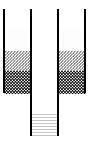
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

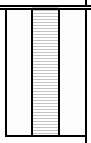


Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-411**
Monitor Well ID No.: **MW-411**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	12.53'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 9.5 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes: Offset 15' north from original boring because of access road**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
21–25			OS= 0.0 HS= 0.0 @ 21'	S-5	60/34	34" Wet, olive green, medium to coarse SAND with some silt and fine sand. Trace small grey gravel. End of boring @ 25', MW installed @ 23'.		21–5
26–30								6–10
31–35								11–15
36–40								16–20

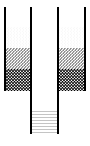
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-412**
Monitor Well ID No.: **MW-412**
Sheet 1 of 2

Boring Location:	N: 15350334.78' E: 1108837.28'	Project Number:	140143.0000.4903
Ground Elevation:	13.61'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes: MW-412 completed 12/20/16**	Drill Rig and Model Number:	7822 DT & Truck Mounted CME 75
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0 @ 5'	S-1	54/27	6" Removed by shovel, not in core. 14" Black, moist, fine SAND and SILT, trace subangular gravel and clay. 6" Moist, light brown fine SAND with some fine to medium sand and silt, little small gravel. 7" Dry, brown fine to medium SAND with some silt and fine sand.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
6			OS= 0.0 HS= 0.0 @ 10'	S-2	60/26	26" Dry FILL (crushed brick, cinders, ash, shattered rock).	Ten (10) Feet 4" Schedule 40 PVC Riser (-)2-8.5' Filter Sand Pack 25-Mar (20' thickness)	6
11	B412(11.5') @ 1135 - EPH B412(13') @ 1145 - EPH		OS= 0.0 HS= 0.0 @ 15'	S-3	60/36	11" dry FILL (crushed brick, ash, cinders). 25" wet FILL(cinders, klinkers, ash). Light brown crushed firebrick at 26" to 28" Oily from 16" to 36".	Fifteen (15) Feet 4" Schedule 40 0.01 Slotted Screen 8-23'	11
16	B412(19') @ 155 - EPH		OS= 0.0 HS= 0.0 @ 16'	S-4	60/24	18" Wet FILL (cinders, ash, klinkers) some fine to coarse sand. Oily from 0" to 15". 6" Wet, olive grey fine SAND with silt.		16
20								20

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-412**
Monitor Well ID No.: **MW-412**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.61'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes: MW-412 completed 12/20/16**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
21			OS= 0.0 HS= 0.0 @ 25'	S-5	60/28	8" Wet light brown/ olive green fine to medium SAND with some silt.		21
22						8" Black, wet FILL (cinders, ash, trace klinkers).		22
23						8" Moist, olive green SILT with some clay, moderate to highly plastic.		23
24						4" Wet, brown, medium to coarse SAND with little fine sand, silt and clay.		4
25						End of Boring @ 25', MW installed @ 23'.		5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

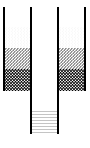
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-413**
Monitor Well ID No.: **MW-413**
Sheet 1 of 2

Boring Location:	N: 15350315.56' E: 1108835.03'	Project Number:	140143.0000.4903
Ground Elevation:	13.74'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT & Truck Mounted CME 75
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)
0							
1-5			OS= 0.0 HS= 0.0 @ 5'	S-1	54/53	18" Dark black SILT with some fine sand. 35" Dry light brown, medium to coarse SAND with silt and little gravel.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness) Ten (10) Feet 4" Schedule 40 PVC Riser (-)2-8.3'
6-10			OS= 0.0 HS= 0.0 @ 10'	S-2	60/48	22" Light brown medium to coarse SAND with silt and little gravel. 14" Dark black FILL (ash and cinders).	Filter Sand Pack 3-25' (20' thickness)
11-15	B413(11') @ 1015 - EPH B413(14') @ 1025 - EPH		OS= 9.0 HS= 18.0 @ 13'	S-3	60/31	5" Fine to medium moist light brown SAND with some cinders. 26" Wet FILL with some cinders. Oil saturation at 13" to 31". Klinkers at bottom.	Fifteen (15) Feet 4" Schedule 40 0.01 Slotted Screen 8-23'
16-20			OS= 5.0 HS= 25.0 @ 16'	S-4	60/19	19" Wet, black FILL (cinders, ash) saturated with oil. Gravel size klinkers at bottom.	

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-413**
Monitor Well ID No.: **MW-413**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.74'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/12/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS =	Drilling Company:	New England Geotech
Hammer: GH-60	Headspace PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
21			OS= 0.0			9" Wet dark grey/ green fine SAND with silt.		21
22						12" Wet black FILL (cinders, ash, small klinkers).		22
23	B413(23') @ 1040 - EPH		HS= 0.0	S-5	60/29	8" Wet SILT with some clay, trace sand. Moderately plastic.		23
24								4
25						End of boring @ 25', MW installed @ 23.3'.		5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

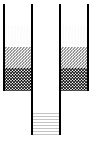
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-414**
Monitor Well ID No.: **MW-414**
Sheet 1 of 2

Boring Location:	N: 15350245.69' E: 1108811.06'	Project Number:	140143.0000.4903
Ground Elevation:	14.18'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 10 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes: well completed on 12/20/16**	Drill Rig and Model Number:	7822 DT & Truck Mounted CME 75
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0	S-1	60/48	8" Dark brown fine SAND with some silt, moist. 24" Dark brown fine SAND with some silt, little angular gravel, moist to dry. 16" Black FILL with cinders, ash, fire brick, dry.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
5			OS= 0.0 HS= 1.8 @ 10'	S-2	60/31	31" Black FILL with klinkers, cinders, ash and fire brick, dry.	Ten (10) Feet 4" Schedule 40 PVC Riser (-)2-8' Filter Sand Pack 3-23' (20' thickness)	5
10	B414 (11') @ 1120 - EPH		OS= 0.5 @ 11'	S-3	60/39	17" Black FILL, cinders and klinkers, moist to wet. 22" Black fine to medium SAND with some silt, wet, oily.	Fifteen (15) Feet 4" Schedule 40 0.01 Slotted Screen 8-23'	10
14	B414 (14') @ 1128 - EPH		OS= 1.1 HS= 55 @ 14'					14
15	B414 (15.5) @ 1125 - EPH		OS= 0.0 HS= 15 @ 16'	S-4	60/29	29" Olive green to brown fine to coarse SAND with some silt and little fine gravel, wet.		15
20								20

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-414**
Monitor Well ID No.: **MW-414**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	14.18'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 10 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes: well completed on 12/20/16**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21						End of Boring @ 20', MW-414 to 23'.		21
22								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

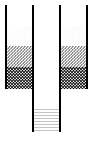
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

TRC		**Project:** 6 Bridge Street, Weymouth, MA	Boring ID No.: **B-415** Monitor Well ID No.: **MW-415** Sheet 1 of 2
Boring Location:	N: 15350228.72' E: 1108892.28'	Project Number:	140143.0000.4903
Ground Elevation:	14.43'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Stick-Up)	Depth (feet)
0								0
1			OS= 0.0 HS= 0.0	S-1	60/38	6" ORGANICS, top soil, roots and grass, moist. 16" Brown to white fine to coase SAND, some fine gravel, some concrete. 16" Tan fine to medium SAND.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness)	1
5							Ten (10) Feet 2" Schedule 40 PVC Riser (-)2-8'	5
6			OS= 0.0 HS= 0.2	S-2	60/50	36" Tan fine to medium SAND. 14" Black COAL SLAG, some ash, some coal dust, dry.	Filter Sand Pack 3-23' (20' thickness)	6
10								10
11	B415 (11.8') @ 0835 - EPH		OS= 0.2 HS= 0.8	S-3	60/28	16" Black COAL SLAG, some ash, some coal dust, dry. 4" Black SLAG and ASH, fall in, moist. 8" Black FILL and FREE OIL, saturated.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	11
12	B415 (12.2') @ 0840 - EPH							12
13	B415 (13.4') @ 0845 - EPH Duplicate B451 (13.4) - EPH		OS= 1.1 HS= 30.6					13
15								15
16			OS= 1.1 HS= 5.3	S-4	60/30	30" FILL, slag and ash, oily to 16', water saturated.		16
20								20

Proportions Used
- 0-10% Trace
- 10-20% Little
- 20-35% Some
- 35-50% And

Change in Material Type

Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-415**
Monitor Well ID No.: **MW-415**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	14.43'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11.5 feet below ground surface	Dated Drilled:	12/14/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			.			20" SLAG and FILL, water saturated.		21
22						8" Gray fine SAND, some silt.		22
23			OS= 0.2 HS= 1.1	S-5	60/28	End of boring @ 23', MW Installed @ 23'.		23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

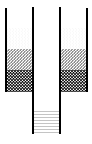
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

Project: 6 Bridge Street, Weymouth, MA

Boring ID No.: **B-416**
Monitor Well ID No.: **MW-416**
Sheet 1 of 2

Boring Location:	N: 15350142.8' E: 1108844.24'	Project Number:	140143.0000.4903
Ground Elevation:	13.34'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0							xx xx	-3 to 0
0 to 6			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum truck removed 0-6'. 24" Dark brown to black medium to fine SAND, little coarse sand, trace gravel, no odor, no staining. 24" Dark brown to black medium to fine SAND, some coarse sand, no odor, no staining. 12" Black fine to coarse SAND, trace gravel, no odor, no staining.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness) Ten (10) Feet 2" Schedule 40 PVC Riser 0-10'	0 to 6
6 to 10			OS= 0.0 HS= 0.0 @ 10'	S-2	48/26	6" FILL with cinders and ash, dry. 20" Fine to medium SAND with some silt and coarse sand, silt decreased with depth, dry.	Filter Sand Pack 3-25' (22' thickness)	6 to 10
10 to 15	B416 (11') @ 1405 - EPH B416 (15') @ 1400 - EPH		OS= 0.0 HS= 0.0 @ 11'	S-3	60/50	12" FILL with cinders and klinkers, moist. 38" Brown fine to coarse SAND with silt, wet.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	10 to 15
15 to 20			OS= 1.1 HS= 5.3	S-4	60/39	39" Brown fine to coarse SAND with some silt, little fine gravel. Iron staining from 18"-22" of recovery, wet. End of Boring @ 20', MW-414 to 23'.		15 to 20

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-416**
Monitor Well ID No.: **MW-416**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.34'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	J. Stapleton

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			.			End of Boring @ 20', MW-416 to 23'.		21
22								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

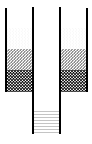
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Boring & Well Construction Log

TRC		**Project:** 6 Bridge Street, Weymouth, MA	Boring ID No.: **B-417** Monitor Well ID No.: **MW-417** Sheet 1 of 2
Boring Location:	N: 15350181.59' E: 1108754.52'	Project Number:	140143.0000.4903
Ground Elevation:	13.27'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3 to 0							xx xx	-3 to 0
1 to 6			OS= 0.0 HS= 0.0	S-1	60/60	Vacuum truck removed 0-6'. 24" Dark brown to black medium to fine SAND, little coarse sand, some gravel, no odor, no staining. 24" Dark brown to black medium to fine SAND, some coarse sand, no odor, no staining. 12" Black fine to coarse SAND, trace gravel, no odor, no staining.	Quikrete 0-2' (2' thickness) Bentonite -2.0.-3.0' (1' thickness) Ten (10) Feet 2" Schedule 40 PVC Riser 0-10'	1 to 6
7 to 10			OS= 0.0 HS= 0.0 @ 10'	S-2	48/37	5" Black CLAY with fine sand, ash and cinders 32" Fine to medium SAND with some silt and coarse sand, trace shattered cobble, dry. Decreasing silt with depth.	Filter Sand Pack 3-25' (22' thickness)	7 to 10
11 to 15	B417 (11') @ 1254 - EPH B417 (15') @ 1256 - EPH		OS= 0.0 HS= 0.0 @ 15'	S-3	60/50	7" Fine to medium SAND with some silt and coarse sand, trace shattered cobble, dry. 7" Black FILL with cinders and ash, some fine sand, moist to wet. 36" Fine to coarse SAND with some silt, wet.	Fifteen (15) Feet 2" Schedule 40 0.01 Slotted Screen 8-23'	11 to 15
16 to 20			OS= 0.0 HS= 0.0	S-4	60/31	31" Brown medium to coarse SAND with some fine sand and silt, trace angular gravel, wet. End of Boring @ 20', MW-417 to 23'.		16 to 20

Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen

Boring & Well Construction Log

Project: 6 Bridge Street
Weymouth, MA

Boring ID No.: **B-417**
Monitor Well ID No.: **MW-417**
Sheet 2 of 2

Boring Location:	see pg. 1	Project Number:	140143.0000.4903
Ground Elevation:	13.27'	Project Manager:	Rick Paquette
Depth to First Water:	Approximately 11 feet below ground surface	Dated Drilled:	12/13/2016
Depth to Static Water:		Drill Type:	Direct Push - Geoprobe
Stabilization Time:		Sampling Method:	Continuous
Sampler Description	**Notes:**	Drill Rig and Model Number:	7822 DT
Type: 5 foot Macrocore	OS = open liner reading at corresponding depth of Headspace. HS = Headspace	Drilling Company:	New England Geotech
Hammer: GH-60	PID reading with a MiniRAE 2000 (10.6 eV Lamp and RF = 1.0),	Driller's Name:	Hayes Rebijas
Fall: 60 inch pneumatic		TRC Representative:	C. Foster

Depth (feet)	Sample I.D.	Blow Counts	PID HS (ppm/v)	Split Spoon	Pen/Rec (In.)	Description of Sample	Well Construction (Flush Mount)	Depth (feet)
-3								-3
-2								-2
-1								-1
20								0
21			.			End of Boring @ 20', MW-417 to 23'.		21
22								22
23								23
24								4
25								5
26								6
27								7
28								8
29								9
30								10
31								11
32								12
33								13
34								14
35								15
36								16
37								17
38								18
39								19
40								20

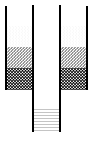
Proportions Used
0-10% Trace
10-20% Little
20-35% Some
35-50% And

Change in Material Type
Change in Deposit Type

Penetration Resistance ("Blow Counts")

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Soft
		31+	Hard

Concrete
Silica Sand Pack
Native Fill
Bentonite Seal
Riser
Screen



Low-Flow System Sampling

Date:	8/30/2016	Turbidity Make/Model:	LaMotte2020we		
Operator Name:	L.Hopp	Well ID:	201		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	NM	Start Time:	1300 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1400 hrs
Project Name:	140143.0000.7478	Depth to Water:	NM		
Site Name:	Weymouth C/S	Final Pumping Rate:	250 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take:	NM	Calculated Sample Rate:	300 sec		
Sonde SN:	387487	Total Volume Pumped:	8 gallons		

Low Flow Stabilization Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
300	6.19	-14.4	11597.3	-0.01	17.03	1.92	NM
600	6.15	-3.4	11711.5	-0.01	16.56	1.65	NM
900	6.15	7.1	11835.6	-0.01	16.33	1.99	NM
1200	6.14	19.3	11917.9	-0.01	16.33	2.05	NM
1500	6.13	32.9	11955.6	-0.01	16.41	2.15	NM
1800	6.13	50.5	11993.1	-0.01	16.38	3.69	NM
2100	6.13	63.5	12336.8	0.5	16.24	3.75	NM
2400	6.14	45.5	12357.5	0	16.14	3.69	NM
2700	6.13	35	12273.7	-0.01	16.28	3.66	NM
3000	6.13	31.6	12165.3	-0.01	16.34	3.72	NM

NOTE:
MW 201 depth to water could not be accurately measured due to the thick, viscous product coating the probe.

Low-Flow System Sampling

Date:	8/29/2016	Turbidity Make/Model:	Lamotte2020we		
Operator Name:	L.Hopp	Well ID:	202		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	19.75 ft	Start Time:	0930 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1130 hrs
Project Name:	140143.0000.7478	Depth to Water:	12.78 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	300 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take:	16 ft	Calculated Sample Rate:	300 sec		
Sonde SN:	387487	Total Volume Pumped:	10 gallons		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
300	6.34	-4.7	31094.3	0.06	15.66	NM	12.8
600	6.40	8.5	31340.1	0.03	15.36	NM	12.8
900	6.42	16.6	31614.7	0.03	15.51	NM	12.8
1200	6.43	22.5	31453.2	0.03	15.58	NM	12.8
1500	6.44	27.2	31498.1	0.02	15.59	NM	12.8
1800	6.45	31	31449.2	0.02	15.61	NM	12.8
2100	6.46	33.5	31455.8	0.02	15.61	NM	12.81
2400	6.46	36.1	31509.4	0.02	15.67	NM	12.81
2700	6.47	38	31491.8	0.02	15.77	NM	12.81
3000	6.47	38	31990.4	0.04	15.67	NM	12.81
3300	6.48	38.1	31973.6	0.07	15.64	NM	12.82
3600	6.48	36.8	32025	0.05	15.57	NM	12.82
3900	6.48	36.1	32054.5	0.07	15.48	NM	12.82
4200	6.49	36.6	31940	0.08	15.51	NM	12.82
4500	6.49	36.9	32122	0.07	15.44	NM	12.82
4800	6.49	36.4	32076.5	0.07	15.48	NM	12.83
5100	6.49	36.8	31954.8	0.09	15.26	NM	12.83
5400	6.49	36.9	31961.9	0.05	15.25	NM	12.83
5700	6.49	37	32010.3	0.05	15.23	NM	12.83
6000	6.48	35.2	32164.2	0.02	15.3	3.68	12.84

Low-Flow System Sampling

Date:	8/29/2016	Turbidity Make/Model:	Lamotte2020we		
Operator Name:	L.Hopp	Well ID:	203		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	19.75 ft	Start Time:	1230 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1415 hrs
Project Name:	140143.0000.7478	Depth to Water:	12.78 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	300 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take:	16 ft	Calculated Sample Rate:	300 sec		
Sonde SN:	387487	Total Volume Pumped:	10 gallons		

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
300	6.46	22.8	41022.8	0	14.98	5.46	12.78
600	6.46	24.6	40807.3	0.01	14.94	5.32	12.78
900	6.46	25.9	41279.3	0.02	14.89	2.22	12.78
1200	6.46	27.6	41328	0.03	14.8	2.31	12.78
1500	6.46	29.7	40879.9	0.04	14.79	2.31	12.8
1800	6.46	31	40799.5	0.05	15.01	2.28	12.8
2100	6.46	31.7	40632.4	0.08	14.91	2.2	12.82
2400	6.46	32.8	40386.3	0.09	15.21	2.35	12.82
2700	6.46	33.7	40547.8	0.13	15.35	2.25	12.84
3000	6.46	34.4	40701.8	0.16	14.98	2.19	12.84
3300	6.46	34.7	40441	0.16	15.21	2.15	12.86
3600	6.46	36	40302.8	0.18	15.3	2.2	12.86
3900	6.46	36.4	40407.8	0.19	15.21	2.23	12.86
4200	6.46	36.5	40604.2	0.22	14.9	2.18	12.86

Low-Flow System Sampling

Date:	8/29/2016	Turbidity Make/Model:	Lamotte2020we		
Operator Name:	L.Hopp	Well ID:	204		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	20.85	Start Time:	1510 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1545 hrs
Project Name:	140143.0000.7478	Depth to Water:	13.8 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	300 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take:	17 ft	Calculated Sample Rate:	300 sec		
Sonde SN:	387487	Total Volume Pumped:	10 gallons		

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
300	6.82	126.6	29870.8	0.63	15.19	5.07	13.85
600	6.72	107.2	31969.2	0.54	14.6	8	13.85
900	6.69	99.8	30954.9	0.4	14.49	10.17	13.85
1200	6.68	95.1	32159.3	0.17	14.32	4.87	13.87
1500	6.67	92.7	31991.5	0.19	14.38	2.16	13.87
1800	6.67	91	31912.4	0.17	14.33	2.1	13.87

Low-Flow System Sampling

Date:	8/30/2016	Turbidity Make/Model:	Lamotte2020we		
Operator Name:	L.Hopp	Well ID:	205		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	21.9 ft	Start Time:	0750 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1000 hrs
Project Name:	140143.0000.7478	Depth to Water:	14.85 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	300 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take	18 ft	Calculated Sample Rate:	300 sec		
Sonde SN:	387487	Total Volume Pumped:	10 gallons		

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
300	6.87	-28.8	21618.7	0.03	13.76	6.23	14.85
600	6.94	-14.7	22863.3	0.05	13.63	2.49	14.85
900	6.97	-1.3	22892	0.04	13.62	2.03	14.85
1200	6.98	17.8	22820.2	0.05	13.58	2.13	14.87
1500	6.98	45.7	22814.5	0.04	13.58	2.22	14.87
1800	6.99	84.1	22885.4	0.04	13.58	2.15	14.88
2100	6.99	123.9	23071.8	0.01	13.66	2.08	14.88
2400	7.00	168	22879.4	0.01	13.66	2.14	14.88
2700	7.00	215.4	22821.2	0.01	13.71	2.04	14.9
3000	7.00	271.7	22627.2	0.02	13.76	1.96	14.9
3300	7.00	356	22613.1	0.03	13.81	1.85	14.9

Low-Flow System Sampling

Date:	8/30/2016	Turbidity Make/Model:	Lamotte2020we		
Operator Name:	L.Hopp	Well ID:	205		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	21.9 ft	Start Time:	0750 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1000 hrs
Project Name:	140143.0000.7478	Depth to Water:	14.85 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	300 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take	18 ft	Calculated Sample Rate:	300 sec		
Sonde SN:	387487	Total Volume Pumped:	10 gallons		

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
3600	7.00	460.5	22692.7	0.03	13.85	1.84	14.91
3900	7.01	538.6	22568.4	0.04	13.85	1.82	14.91
4200	7.01	565.9	22649.7	0.04	13.88	1.8	14.92
4500	7.01	596.1	22579.1	0.04	13.83	1.76	14.92
4800	7.01	631.8	22582.3	0.03	13.92	1.74	14.93
5100	7.01	638.2	22874.1	0.01	13.92	1.7	14.93
5400	7.01	667.3	22749.5	0.02	14.05	1.75	14.94
5700	7.01	695.6	22744.9	0.01	14.12	1.72	14.94
6000	7.01	703.7	22526.4	0.02	14.14	1.68	14.94
6300	7.01	685.9	22654.5	0.01	14.15	1.74	14.95
6600	7.01	636.5	22484	0.01	14.24	1.78	14.95
6900	7.01	564.1	22374.8	0.02	14.22	1.72	14.95

Low-Flow System Sampling

Date:	11/3/2016	Turbidity Make/Model:	HACH 2100Q		
Operator Name:	L.Hopp	Well ID:	201		
Pump Model/Type:	Geopump	Well diameter:	2 in PVC		
Company Name:	TRC	Well Total Depth:	22.90 ft	Start Time:	1150 hrs
Tubing Type:	LDPE	Screen Length:	15 ft	Sample Collected:	1215 hrs
Project Name:	140143.0000.7478	Depth to Water:	14.00 ft	Dup = MW-221	
Site Name:	Weymouth C/S	Final Pumping Rate:	200 mL/min	Sample Collected:	1115 hrs
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.09 L		
Pump in take:	18 ft	Calculated Sample Rate:	180 sec		
Sonde SN:	33922	Total Volume Pumped:	2 gallons		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
180	7.23	-51.1	26937.7	0.29	15.88	-	14.00
360	7.25	-44.9	27550.8	0.20	15.30	40.1	14.00
540	7.23	-42.1	27696.6	0.23	15.30	21.8	14.00
720	7.22	-40.3	27252.7	0.23	15.30	20.1	14.00
900	7.20	-37.6	26934.7	0.21	15.24	16.3	14.00
1080	7.19	-35.5	26880.1	0.20	15.21	16.2	14.00
1260	7.19	-34.0	26864.5	0.18	15.12	17.1	14.00
1440	7.18	-33.7	27227.7	0.18	15.12	16.5	14.00
1620	7.19	-32.5	27240.9	0.19	15.11	16.1	14.00
1800	7.19	-31.6	27283.3	0.18	15.08	16.0	14.00

Low-Flow System Sampling

Date:	11/1/2016	Turbidity Make/Model:	Hach		
Operator Name:	L.Hopp	Well ID:	202		
Pump Model/Type:	Geopump	Well diameter:	2 in. PVC		
Company Name:	TRC	Well Total Depth:	19.95 ft	Start Time:	1100 hrs
Tubing Type:	LDPE	Screen Length:	15 ft	Sample Collected:	1138 hrs
Project Name:	140143.0000.7478	Depth to Water:	12.60 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	200 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.02399567 gal		
Pump in take:	16.25 ft	Calculated Sample Rate:	180 sec		
Sonde SN:	33922	Total Volume Pumped:	1.3 gallons		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
180	6.27	51.6	38748.6	0.70	10.43	12.67	12.6
360	6.30	49.1	39319.9	0.45	11.01	9.04	12.61
540	6.35	46.5	38889.9	0.38	11.66	9.34	12.61
720	6.39	44.2	38898.4	0.33	11.94	9.63	12.61
900	6.42	42.0	38916.4	0.29	12.13	9.40	12.61
1080	6.46	39.9	38723.8	0.26	12.39	9.30	12.61
1260	6.49	38.3	38778.8	0.25	12.4	8.00	12.61
1440	6.52	36.3	38779.0	0.24	12.56	6.27	12.61
1620	6.55	34.4	38767.9	0.23	12.63	6.15	12.61
1800	6.58	32.7	38723.6	0.22	12.76	6.20	12.61
1980	6.61	31.0	38564.3	0.22	12.82	6.18	12.61

Low-Flow System Sampling

Date:	11/1/2016	Turbidity Make/Model:	Hach		
Operator Name:	C.Foster	Well ID:	203		
Pump Model/Type:	Geopump	Well diameter:	2 in. PVC		
Company Name:	TRC	Well Total Depth:	19.80 ft	Start Time:	1130 hrs
Tubing Type:	LDPE	Screen Length:	15 ft	Sample Collected:	1205 hrs
Project Name:	140143.0000.7478	Depth to Water:	12.98 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	300 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.02399567 gal		
Pump in take:	16.34 ft	Calculated Sample Rate:	180 sec		
Sonde SN:	30666	Total Volume Pumped:	4 gallons		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
180	6.49	24.1	39812.5	1.34	16.65	16.2	13.26
360	6.50	12.6	41680.5	1.07	15.17	7.41	13.26
540	6.50	11.3	41712.1	0.76	15.22	7.48	13.25
720	6.50	10.8	41754.4	0.62	15.21	4.49	13.24
900	6.50	10.8	41923.8	0.52	15.07	4.42	13.24
1080	6.49	10.1	42002.2	0.46	14.94	3.88	13.24
1260	6.49	10.3	42100.4	0.40	14.89	3.94	13.24
1440	6.49	10.4	42007.2	0.36	14.88	1.93	13.24
1620	6.49	9.50	42385.8	0.33	14.53	1.56	13.24
1800	6.49	9.50	42211.5	0.29	14.88	1.48	13.24
1980	6.49	9.80	42068.9	0.28	15.12	1.49	13.24

Low-Flow System Sampling

Date:	11/1/2016	Turbidity Make/Model:	Hach		
Operator Name:	L.Hopp	Well ID:	204		
Pump Model/Type:	Geopump	Well diameter:	2 in. PVC		
Company Name:	TRC	Well Total Depth:	20.7 ft	Start Time:	1300 hrs
Tubing Type:	LDPE	Screen Length:	15 ft	Sample Collected:	1330 hrs
Project Name:	140143.0000.7478	Depth to Water:	13.9 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	200 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.05283441 gal		
Pump in take:	17.29 ft	Calculated Sample Rate:	180 sec		
Sonde SN:	33922	Total Volume Pumped:	1.1 gallon		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
180	7.20	25.5	31268.9	1.03	13.46	3.09	13.90
360	7.12	26.5	33371.7	0.50	13.35	2.58	13.85
540	7.04	27.0	35258.9	0.38	13.38	2.76	13.85
720	7.00	26.5	36113.0	0.30	13.37	1.03	13.85
900	6.97	26.0	36618.7	0.28	13.39	0.84	13.85
1080	6.96	25.6	36794.6	0.25	13.30	0.92	13.85
1260	6.95	25.1	37185.5	0.23	13.19	1.65	13.85
1440	6.94	24.8	37378.4	0.21	13.17	1.32	13.78
1620	6.93	24.4	37663.3	0.21	13.17	0.74	13.78
1800	6.93	24.1	37689.6	0.20	13.12	0.38	13.75

Low-Flow System Sampling

Date:	11/1/2016	Turbidity Make/Model:	Hach		
Operator Name:	C.Foster	Well ID:	205		
Pump Model/Type:	Geopump	Well diameter:	2 in. PVC		
Company Name:	TRC	Well Total Depth:	22.00 ft	Start Time:	1335 hrs
Tubing Type:	LDPE	Screen Length:	15 ft	Sample Collected:	1355 hrs
Project Name:	140143.0000.7478	Depth to Water:	14.83 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	250 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.02399567 gal		
Pump in take:	18.31 ft	Calculated Sample Rate:	180 sec		
Sonde SN:	30666	Total Volume Pumped:	2.5 gallons		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
180	7.03	-63.3	20009.7	0.27	17.77	0.87	14.89
360	7.04	-56.7	25135.9	0.12	14.72	1.32	14.90
540	7.04	-53.5	26104.3	0.10	14.41	0.42	14.90
720	7.04	-52.4	26331.4	0.08	14.40	0.68	14.90
900	7.04	-51.2	26295.3	0.07	14.45	0.87	14.90
1080	7.04	-50.3	26270.9	0.07	14.40	0.36	14.90

Low-Flow System Sampling

Date:	11/1/2016	Turbidity Make/Model:	Hach		
Operator Name:	C.Foster	Well ID:	206		
Pump Model/Type:	Geopump	Well diameter:	2 in. PVC		
Company Name:	TRC	Well Total Depth:	20.98 ft	Start Time:	1524 hrs
Tubing Type:	LDPE	Screen Length:	10 ft	Sample Collected:	1550 hrs
Project Name:	140143.0000.7478	Depth to Water:	14.22 ft		
Site Name:	Weymouth C/S	Final Pumping Rate:	250 mL/min		
Tubing Diameter:	.170 x 1/4 in	Total System Volume:	0.02399567 gal		
Pump in take:	17.60 ft	Calculated Sample Rate:	180 sec		
Sonde SN:	30666	Total Volume Pumped:	3 gallons		

Low Flow Stabilzation Summary

Time	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)
180	6.88	-32.50	2989	1.02	16.65	0.56	14.22
360	6.78	-45.80	4074	0.94	16.14	0.68	14.22
540	6.73	-50.00	4872	0.83	16.12	0.28	14.22
720	6.71	-50.30	5200	0.73	16.11	0.32	14.22
900	6.70	-49.90	5328	0.70	16.12	0.26	14.22
1080	6.69	-49.20	5368	0.67	16.11	0.28	14.22
1260	6.68	-48.50	5441	0.68	16.13	0.26	14.22

TRC

Groundwater Field Data Record

Project: Spectra **Project No.:** 140143 **Date/Time:** 1/6/17 **Sheet** 1 **of** 1

TRC Personnel: Kolleenshea **Well ID:** MW-201

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground) ____ ft.

Riser Stick-up (from ground) ____ ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ____

WELL MATERIAL [X] PVC [ ] SS

Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] measured [ ] historical

Water Depth — ft.

Well Volume ____

LNAPL/DNAPL Depth = 13.64

NAPL Thickness = ____

Depth of pump intake: 18 ft

Static water level after pump put into well: 13.58 ft

Initial purge Rate/ Water Level (100-400 ml/min): 300 ml/min

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 300 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0930	0935	0940	0945	0950	0955	1000	1005	1010
Temp. (°C)	P	10.44	11.83	12.02	12.03	12.02	12.12	12.10	12.08
Conduct. (µmhos/cm)		36823	36418	36462	36463	36462	36502	36536	36564
DO (mg/L)	U	3.50	2.21	2.23	2.24	2.16	1.93	1.85	1.85
pH (su)	R	[illegible]	[illegible]	6.27	6.27	6.20	6.25	6.25	6.25
ORP (millivolts)	G	-44.0	-56.9	-64.7	-66.5	-67.1	-69.5	-71.4	-71.5
Turbidity (NTU)	E	13.0	2.90	3.19	2.09	2.05	1.06	1.53	2.06
Flow (ml/min)		300	300	300	300	300	300	300	300
Depth To Water (ft)	13.64	—	—	—	—	—	—	—	—
Cumulative Purge Vol. (gal or L)									

Time	1015	1020	1025	1025		
Temp. (°C)	12.17	12.11	12.10	S		
Conduct. (µmhos/cm)	36586	36650	36654	S		
DO (mg/L)	1.80	1.75	1.78	A		
pH (Std. Units)	6.25	6.25	6.25	M		
Eh/ORP (millivolts)	-72.0	-73.0	-73.5			
Turbidity (NTU)	2.03	1.41	1.09	P		
Flow (ml/min)	300	300	300	L		
Depth To Water (ft)	—	—	—	E		
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* **(3 consecutive readings)**

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: final DTP: 13.89 ft

dump ~ 6 gallons water in labeled drum

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L A	1025	none	
VPH	N	HCl	3	40mL A	1025	none	

* Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleenshea

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	143140	1/4/17	

TRC Personnel: Kelleenby

Well ID: MW-202

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER ☐ 2 inch ☐ 4 inch ☐ 6 inch

Other: _____

WELL MATERIAL ☑ PVC ☐ SS

Other: _____

Well Depth 23 ft. ☒ top of riser ☐ top of casing ☐ _____ ☐ measured ☐ historical

Water Depth 12.23 ft.

Well Volume _____

LNAPL/DNAPL Depth = NA

NAPL Thickness = NA

Depth of pump intake: ~18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 350 ml/min

Adjusted purge Rates/time/WL(record changes)

350 → 300 @ 0920

Flow rate at time of sampling: 300 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0910	0915	0920	0925	0930	0935	0940	0945	0950
Temp. (°C)		11.64	11.56	11.65	11.57	11.67	11.69	11.69	11.69
Conduct. (µmhos/cm)		30514	30137	29892	29902	29950	29919	29991	30005
DO (mg/L)		1.10	0.69	.68	.60	.65	.56	.57	.57
pH (su)		6.48	6.27	6.18	6.16	6.12	6.10	6.10	6.10
ORP (millivolts)		-18.2	-15.4	-15.2	-15.6	-15.6	-16.0	-15.8	-16.1
Turbidity (NTU)		25.1	20.0	11.5	6.54	4.83	4.53	4.21	4.12
Flow (ml/min)	350	350	350	300	300	300	300	300	300
Depth To Water (ft)	12.23	12.26	12.27	12.26	12.26	12.26	12.26	12.26	12.26
Cumulative Purge Vol. (gal or L)									

Time	0955	1000	1000
Temp. (°C)	11.65	11.65	S
Conduct. (µmhos/cm)	30001	30000	A
DO (mg/L)	.58	.57	M
pH (Std. Units)	6.10	6.10	P
Eh/ORP (millivolts)	-16.1	-16.2	L
Turbidity (NTU)	4.32	4.11	E
Flow (ml/min)	300	300	
Depth To Water (ft)	12.26	12.26	
Cumulative Purge Vol. (gal or L)			

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☒	☒
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: _____	☐	☐

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L AG	1000	none	
VPH	N	HCl	3	40mL A	1000	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kelleenby

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth CS	146483.000 4403	1/3/17 1410	

TRC Personnel: BA

Well ID: MW-203

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ____

WELL MATERIAL

[X] PVC [X] SS

Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ [ ] measured [ ] historical

Water Depth 13.32 ft.

Well Volume ____

LNAPL/DNAPL Depth = ____

NAPL Thickness = ____

Depth of pump intake: ____

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 220

Adjusted purge Rates/time/WL(record changes): 260, 270

Flow rate at time of sampling: 270

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1410	1415	1420	1425	1430	1435	1440	1445	1450
Temp. (°C)	Start	11.37	11.46	11.49	11.54	11.64	11.49	11.50	11.40
Conduct. (µmhos/cm)	Purge	4199.7	4196.4	4193.6	4194.7	4187.5	4187.4	4186.4	4173.3
DO (mg/L)		3.61	2.47	3.73	2.59	4.39	4.62	4.54	4.53
pH (su)		6.51	6.48	6.50	6.48	6.48	6.48	6.47	6.47
ORP (millivolts)		93.4	89.1	92.1	89.3	87.9	89.3	87.1	86.1
Turbidity (NTU)			28.4	23.7	26.4	21.0	19.3	18.7	13.6
Flow (ml/min)	220	260	270	→	→	→	→	→	→
Depth To Water (ft)	13.32	13.39	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1455	1500	1505	1510	1515	1320
Temp. (°C)	11.41	11.47	11.53	11.51	11.56	11.57
Conduct. (µmhos/cm)	4173.4	4183.1	4197.6	4201.6	4163.2	4184.6
DO (mg/L)	4.76	4.41	5.31	5.61	5.50	5.63
pH (Std. Units)	6.46	6.47	6.47	6.45	6.46	6.45
Eh/ORP (millivolts)	85.3	84.4	82.6	83.7	83.4	82.6
Turbidity (NTU)	11.4	9.74	8.76	10.41	11.3	9.70
Flow (ml/min)	270	→	→	→	→	→
Depth To Water (ft)	13.39	→	→	→	→	→
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments: Clear, NRO, NRS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VOA	N	HCl	3	40ml Amber	1320		
EPH	N	HCl	2	1L Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth CS	14043.0000.403	1/4/17 0845	Sheet 1 of 1

TRC Personnel: BA

Well ID: MW-204

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [✓] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL: [✓] PVC [ ] SS

Other: ______

Well Depth ______ ft. [✓] top of riser [ ] top of casing [ ] measured [ ] historical

Water Depth 13.28 ft.

Well Volume ______

LNAPL/DNAPL Depth = ______

NAPL Thickness = ______

Depth of pump intake: 18

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes): 290

Flow rate at time of sampling: 290

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0850	0855	0900	0905	0910	0915	0920	0925	0930
Temp. (°C)	Start	12.36	12.27	12.24	12.21	12.23	12.48	12.46	12.35
Conduct. (µmhos/cm)	Purge	31913	32059	32147	32269	32373	32471	32502	32673
DO (mg/L)	↓	2.19	2.14	2.01	1.85	1.82	1.87	1.94	1.92
pH (su)		6.76	6.73	6.68	6.66	6.64	6.61	6.58	6.56
ORP (millivolts)		50.3	44.5	44.6	44.7	42.6	40.3	31.1	27.6
Turbidity (NTU)		49.4	47.3	42.1	33.4	24.7	21.3	19.7	6.41
Flow (ml/min)	230	290	→						
Depth To Water (ft)	13.28	13.32	→						
Cumulative Purge Vol. (gal or L)									

Time	0935	0940	0945	0950	0955	
Temp. (°C)	12.37	12.57	12.53	12.53	12.56	
Conduct. (µmhos/cm)	32417	32313	32004	31747	31515	
DO (mg/L)	2.03	2.10	2.24	2.39	2.26	
pH (Std. Units)	6.58	6.53	6.53	6.53	6.54	
Eh/ORP (millivolts)	20.7	15.2	10.5	7.2	6.2	
Turbidity (NTU)	5.31	2.55	2.31	2.01	1.93	
Flow (ml/min)	290	→				
Depth To Water (ft)	13.32	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amber	0955		MW-204
VPH	↓	HCl	3	40mL Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

ord	Project: Spectra	Project No.: 140143	Date/Time: 11/3/17
	TRC Personnel: Kathleen Sica		Sheet 1 of 1
		Well ID: MW-205	

	YES	NO
g Secure	X	
ar Intact	X	
p Intact	X	
Present	X	
Lock Present	X	

ng Equipment: YSI

w-thru Cell Volume:

ID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 15.00 ft. LNAPL/DNAPL Depth = —

Well Volume _____ NAPL Thickness = —

Depth of pump intake: ~18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400ml/min

Adjusted purge Rates/time/WL(record changes) 400 → 350 @ 1430

Flow rate at time of sampling: 350 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1430	1430	1435	1440	1445	1450	1455	1500	1505
Temp. (°C)	D	12.01	12.02	12.04	12.07	12.08	12.05	12.05	12.04
Conduct. (µmhos/cm)	V	27023	27320	27100	27108	27579	27611	27635	27653
DO (mg/L)	R	1.21	1.20	1.13	1.01	.90	1.12	2.19	2.36
pH (su)	G	7.08	7.08	7.08	7.08	7.07	7.07	7.06	7.06
ORP (millivolts)	E	-94.6	-94.3	-95.6	-96.1	-98.8	-95.6	-96.7	-96.8
Turbidity (NTU)		5.86	5.51	4.23	3.82	3.72	2.89	3.24	3.58
Flow (ml/min)	400	400	350	350	350	350	350	350	350
Depth To Water (ft)	15.02	15.02	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Cumulative Purge Vol. (gal or L)									

Time	1515	1515	1520	1525	1525	
Temp. (°C)	12.03	12.11	12.01	11.99	S	
Conduct. (µmhos/cm)	27810	27899	27911	27944	A	
DO (mg/L)	2.30	2.10	2.51	2.47	M	
pH (Std. Units)	7.06	7.05	7.05	7.05	P	
Eh/ORP (millivolts)	-94.8	-94.6	-84.2	-83.6	L	
Turbidity (NTU)	2.92	3.81	3.92	3.34	E	
Flow (ml/min)	350	350	350	350		
Depth To Water (ft)	15.00	15.00	15.00	15.00		
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPA	N	HCl	2	1LA	1525	none	
VPH	N	HCl	3	40MA	1525	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: _____

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/4/17	

TRC Personnel: Kolleen Shea

Well ID: MW 206

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.18 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400 ml/min

Adjusted purge Rates/time/WL(record changes): 400 → 350 @ 1220

Flow rate at time of sampling: 350ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1215	1220	1225	1230	1235	1240	1245	1250	1255
Temp. (°C)	p	12.97	12.92	12.91	12.96	13.03	13.01	13.03	12.99
Conduct. (µmhos/cm)	p	5081	5454	5458	5525	5448	5351	5321	5306
DO (mg/L)	U	3.28	2.97	2.97	3.00	3.33	3.36	3.40	3.42
pH (su)	K	6.58	6.44	6.44	6.43	6.42	6.42	6.42	6.41
ORP (millivolts)	G	-68.1	-74.5	-74.5	-73.8	-71.1	-71.0	-70.9	-69.9
Turbidity (NTU)	E	23.1	10.46	6.86	2.47	3.11	3.25	2.17	0.97
Flow (ml/min)	400	400	350	350	350	350	350	350	350
Depth To Water (ft)	14.18	14.21	14.20	14.20	14.20	14.19	14.19	14.19	14.19
Cumulative Purge Vol. (gal or L)									

Time	1300	1305	1310	1310			
Temp. (°C)	13.01	13.00	12.99	S			
Conduct. (µmhos/cm)	5299	5285	5280	S			
DO (mg/L)	3.51	3.50	3.61	A			
pH (Std. Units)	6.42	6.42	6.42	M			
Eh/ORP (millivolts)	-68.8	-68.2	-68.5	P			
Turbidity (NTU)	0.87	0.56	0.61	L			
Flow (ml/min)	350	350	350	E			
Depth To Water (ft)	14.19	14.19	14.19				
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1LA	1310	none	
VPH	N	HCl	3	40mlA	1310	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of ___
Spectra Weymouth C/S	HO143.0000	1/3/17 1235	

TRC Personnel: BA

Well ID: MW-400

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): BA ~~N/A~~ 2 ft.

Riser Stick-up (from ground): BA ~~N/A~~ 2 ft.

WELL DIAMETER: ☑ 2 inch ☐ 4 inch ☐ 6 inch

Other: ___

WELL MATERIAL: ☑ PVC ☐ SS

Other: ___

Well Depth ___ ft. ☒ top of riser ☐ top of casing ☐ ___ ☑ measured ☐ historical

Water Depth 13.31 ft.

Well Volume ___

LNAPL/DNAPL Depth = ___

NAPL Thickness = ___

Depth of pump intake: ___

Static water level after pump put into well: ___

Initial purge Rate/ Water Level (100-400 ml/min): 220

Adjusted purge Rates/time/WL(record changes): 260

Flow rate at time of sampling: 260

Total volume of water purged: ___

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1235	1240	1245	1250	1255	1300	1305	1310	1315
Temp. (°C)	Start	12.37	12.24	12.15	12.07	12.0	12.06	12.09	12.11
Conduct. (µmhos/cm)	Purge	4136.4	4127.6	4114.3	4117.7	4128.9	4150.5	4163.1	4171.1
DO (mg/L)		1.23	1.24	3.47	4.46	4.52	4.56	4.49	4.47
pH (su)		6.45	6.39	6.37	6.36	6.36	6.35	6.35	6.35
ORP (millivolts)		151.5	143.6	137.1	134.5	130.6	126.2	120.3	120.4
Turbidity (NTU)			29.6	24.3	21.6	17.7	7.40	2.27	2.17
Flow (ml/min)	220	260	→	→	→	→	→	→	→
Depth To Water (ft)	11.31	11.35	11.37	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1320	1325	1330	1335		
Temp. (°C)	12.18	12.18	12.28	12.16		
Conduct. (µmhos/cm)	4187.2	4199.8	4198.8	4211.1		
DO (mg/L)	4.47	4.63	4.72	4.75		
pH (Std. Units)	6.35	6.35	6.34	6.35		
Eh/ORP (millivolts)	119.8	118.6	117.7	116.9		
Turbidity (NTU)	2.31	2.10	1.96	1.90		
Flow (ml/min)	260	→	→	→		
Depth To Water (ft)	11.39	→	→	→		
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☑	☑
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: ___	☐	☐

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HNO_3	2	3 X 40mL	1335		
EPH		HCl	3	1L Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra	Project No.: 140145	Date/Time: 1/31/17	Sheet 1 of 1

TRC Personnel: Kellen Nee

Well ID: MW-401

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: _____

WELL MATERIAL

[X] PVC [ ] SS — Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.38 ft. — Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 200 ml/min

Adjusted purge Rates/time/WL(record changes)

200 → 150 @ 1305

Flow rate at time of sampling: 150 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1255	1300	1305	1310	1315	1320	1325	1330	1335
Temp. (°C)	P	12.40	12.39	12.51	12.50	12.53	12.69	12.71	12.72
Conduct. (µmhos/cm)		29077	29005	29026	29035	29219	29381	29382	29410
DO (mg/L)	V	1.86	1.71	1.73	1.70	1.60	1.58	1.54	1.55
pH (su)	R	7.02	7.02	7.02	7.02	7.01	7.01	7.01	7.02
ORP (millivolts)	E	21.2	21.2	20.6	20.5	19.6	19.5	16.9	15.0
Turbidity (NTU)		2.95	3.05	2.97	3.75	2.01	3.23	4.01	3.02
Flow (ml/min)	200	200	150	150	150	150	150	150	150
Depth To Water (ft)		14.42	14.42	14.42	14.42	14.42	14.42	14.42	14.42
Cumulative Purge Vol. (gal or L)									

Time	1340	1345	1350	1350		
Temp. (°C)	12.69	12.71	12.72	S		
Conduct. (µmhos/cm)	29398	29518	29879	A		
DO (mg/L)	1.55	1.54	1.54	M		
pH (Std. Units)	7.02	7.02	7.02	P		
Eh/ORP (millivolts)	14.6	14.2	14.1	L		
Turbidity (NTU)	3.12	3.11	3.60	E		
Flow (ml/min)	150	150	150			
Depth To Water (ft)	14.42	14.42	14.42			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
~~EPH~~	N	HCl	2	1 L A	1350	none	
VPH	N	HCl	3	40 mL A	1350	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kellen Nee

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/5/17	

TRC Personnel: Kollen Shue

Well ID: MW-402

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: _____

WELL MATERIAL: [X] PVC [ ] SS — Other: _____

Well Depth _____ ft. [ ] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.99 ft. Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~15ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 350ml/min

Adjusted purge Rates/time/WL(record changes)

350 @ 300 @ 0840

Flow rate at time of sampling: 300ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0835	0840	0845	0850	0855	0900	0905	0910	0915
Temp. (°C)	P	14.00	14.03	14.4	14.12	14.18	14.18	14.19	14.25
Conduct. (µmhos/cm)	U	35318	35305	35309	35703	36161	36165	35545	35545
DO (mg/L)	R	1.11	1.44	1.21	1.44	1.16	1.18	1.56	1.51
pH (su)	G	6.59	6.60	6.62	6.64	6.67	6.67	6.65	6.68
ORP (millivolts)	E	2.8	-25.2	-31.2	-44.2	-54.3	-54.6	-61.4	-61.6
Turbidity (NTU)		10.3	5.81	1.41	1.24	31.55	21.78	0.87	0.51
Flow (ml/min)	350	350	300	300	300	300	300	300	300
Depth To Water (ft)	14.99	15.03	15.03	15.03	15.03	15.03	15.03	15.03	15.03
Cumulative Purge Vol. (gal or L)									

Time	0920	0925	0930	0930		
Temp. (°C)	14.19	14.21	14.20	S		
Conduct. (µmhos/cm)	34975	34953	34968	A		
DO (mg/L)	1.52	1.59	1.60	M		
pH (Std. Units)	6.69	6.70	6.70	P		
Eh/ORP (millivolts)	-66.9	-66.8	-67.1	L		
Turbidity (NTU)	0.74	0.83	0.92	E		
Flow (ml/min)	300	300	300			
Depth To Water (ft)	15.03	15.03	15.03			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Were particles (yellow) precipitate that accumulates at bottom of purge bucket

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1LA	0930	none	
VPH	N	HCl	3	40mLA	0930	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kollen Shue

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth CS	140413.0000-1403	1/4/17 1355	Sheet 1 of 1

TRC Personnel: BA

Well ID: MW-403

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL: [X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [X] top of riser [ ] top of casing [X] measured [ ] historical

Water Depth 13.65 ft.

Well Volume ______

LNAPL/DNAPL Depth = ______

NAPL Thickness = ______

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 270

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 270

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1355	1400	1405	1410	1415	1420	1425	1430	1435
Temp. (°C)	Start	13.46	13.49	13.51	13.68	13.69	13.61	13.67	13.63
Conduct. (µmhos/cm)	Purge	29052	29431	29606	31343	33593	34172	34379	36967
DO (mg/L)	↓	4.47	4.52	4.69	3.30	3.43	3.21	3.03	2.53
pH (su)		6.47	6.46	6.42	6.39	6.37	6.36	6.36	6.35
ORP (millivolts)		62.4	62.9	63.4	67.4	69.2	69.7	69.6	70.6
Turbidity (NTU)		6.91	6.32	4.48	3.72	3.69	3.60	3.14	2.71
Flow (ml/min)		270	→						
Depth To Water (ft)	13.65	13.67	→						
Cumulative Purge Vol. (gal or L)									

Time	1440	1445	1450	1455		
Temp. (°C)	13.61	13.56	13.59	13.60		
Conduct. (µmhos/cm)	36946	37821	38675	39272		
DO (mg/L)	2.61	2.76	2.53	2.61		
pH (Std. Units)	6.35	6.34	6.34	6.34		
Eh/ORP (millivolts)	70.7	70.7	71.7	72.5		
Turbidity (NTU)	2.96	2.87	2.74	2.68		
Flow (ml/min)	270	→				
Depth To Water (ft)	13.67	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, N/o, N/s

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40mL Ambers	1455		MW-403
EPH	↓	↓	2	1 L Ambers	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra | Project No.: 140143 | Date/Time: 1/5/17 | Sheet 1 of 1

TRC Personnel: Kolleen Sue | Well ID: MW-404

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground) ______ ft.

Riser Stick-up (from ground) ______ ft.

WELL DIAMETER: ☐ 2 inch ☑ 4 inch ☐ 6 inch

Other: ______

WELL MATERIAL: ☑ PVC ☐ SS

Other: ______

Well Depth ______ ft. ☐ top of riser ☐ top of casing ☐ ______ ☐ measured ☐ historical

Water Depth 12.85 ft.

Well Volume ______

LNAPL/DNAPL Depth = light sheen

NAPL Thickness = ______

Depth of pump intake: ~18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400 ml/min

Adjusted purge Rates/time/WL(record changes): 400 → 375 @ 1315

Flow rate at time of sampling: 375

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1310	1315	1320	1325	1330	1335	1340	1345	1350
Temp. (°C)	13.21	13.37	13.33	13.37	13.35	13.38	13.43	13.44	13.44
Conduct. (µmhos/cm)	45777	45774	45768	45746	45758	45760	45761	45781	45793
DO (mg/L)	1.02	0.55	0.53	0.49	0.47	0.46	0.45	0.42	0.41
pH (su)	6.54	6.40	6.40	6.35	6.34	6.34	6.33	6.32	6.32
ORP (millivolts)	-25.6	-13.5	-13.3	-11.9	-12.0	-12.0	-12.0	-11.6	-11.5
Turbidity (NTU)	4.51	6.59	5.66	2.69	3.25	3.77	3.53	3.21	7.34
Flow (ml/min)	400	400	375	375	375	375	375	375	375
Depth To Water (ft)	12.85	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Cumulative Purge Vol. (gal or L)									

Time	1355	1400	1405	1405		
Temp. (°C)	13.44	13.44	13.44	S		
Conduct. (µmhos/cm)	45780	45778	45781	A		
DO (mg/L)	0.42	0.43	0.43	M		
pH (Std. Units)	6.31	6.31	6.31	P		
Eh/ORP (millivolts)	-11.5	-11.5	-11.2	L		
Turbidity (NTU)	3.50	2.96	2.20	E		
Flow (ml/min)	375	375	375			
Depth To Water (ft)	12.88	12.88	12.88			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1 L A	1405	none	
VPH	N	HCl	3	40 mL A	1405	none	

* Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Sue

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140145	1/4/17	

TRC Personnel: Kollenberg

Well ID: MW-405

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: XSD

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.33 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400 ml/min

Adjusted purge Rates/time/WL(record changes)

100 @ 375 @ 1355

Flow rate at time of sampling: 375 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1350	1355	1400	1405	1410	1415	1420	1425	1430
Temp. (°C)	P	15.06	15.08	15.11	15.03	15.05	15.06	15.07	15.11
Conduct. (µmhos/cm)	P	32545	33158	35207	35397	36880	36920	36881	36981
DO (mg/L)	U	1.03	1.08	0.74	0.66	0.59	0.57	0.53	0.53
pH (su)	R	5.84	5.86	5.89	5.89	5.88	5.88	5.88	5.87
ORP (millivolts)	G	98.2	98.9	101.2	101.1	101.1	101.2	101.1	101.0
Turbidity (NTU)	E	6.64	3.95	3.52	2.38	1.79	1.50	1.02	1.31
Flow (ml/min)	400	400	375	375	375	375	375	375	375
Depth To Water (ft)	14.33	14.35	14.35	14.35	14.35	14.35	14.35	14.35	14.35
Cumulative Purge Vol. (gal or L)									

Time	1435	1440	1440						
Temp. (°C) 1435 1/4 15.11	~~37141~~	~~37359~~	15.11 1/4						
Conduct. (µmhos/cm)	37141	37359	A						
DO (mg/L)	0.54	0.53							
pH (Std. Units)	5.87	5.87	M						
Eh/ORP (millivolts)	101.0	101.1	P						
Turbidity (NTU)	1.01	1.97	L						
Flow (ml/min)	375	375							
Depth To Water (ft)	14.33	14.33	E						
Cumulative Purge Vol. (gal or L)									

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1-L A	1440	none	
VPH	N	HCl	3	40ML A	1440	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kollenberg

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S **Project No.:** 140813.0002.4403 **Date/Time:** 1/5/17 1510 **Sheet** 1 **of** 1

TRC Personnel: BA **Well ID:** MW-406

DUP-2

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other:

WELL MATERIAL: [✓] PVC [ ] SS

Other:

Well Depth ______ ft. [X] top of riser [ ] top of casing; [X] measured [ ] historical

Water Depth 13.84 ft.

Well Volume

LNAPL/DNAPL Depth = 13.80

NAPL Thickness = 0.04

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 280

Adjusted purge Rates/time/WL(record changes): 320

Flow rate at time of sampling: 320

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1510	1515	1520	1525	1530	1535	1540	1545	1550
Temp. (°C)	Start	12.56	12.61	12.59	12.62	12.70	12.66	12.62	12.57
Conduct. (µmhos/cm)	Purging	9776	26311	27401	26407	28614	35281	37205	37477
DO (mg/L)	↓	11.12	3.74	3.01	2.86	2.25	1.80	1.87	2.00
pH (su)		6.91	6.73	6.27	6.19	6.18	6.19	6.22	6.22
ORP (millivolts)		-104.4	-93.6	-84.9	-80.9	-77.4	-73.7	-76.1	-77.2
Turbidity (NTU)		000		20.3	13.9	10.1	8.94	7.31	4.22
Flow (ml/min)	280	320	→						
Depth To Water (ft)	13.84	13.89	→						
Cumulative Purge Vol. (gal or L)									

Time	1555	1600
Temp. (°C)	12.59	12.61
Conduct. (µmhos/cm)	37711	37812
DO (mg/L)	2.10	2.13
pH (Std. Units)	6.22	6.22
Eh/ORP (millivolts)	-78.7	-79.2
Turbidity (NTU)	3.97	3.74
Flow (ml/min)	320	→
Depth To Water (ft)	13.89	→
Cumulative Purge Vol. (gal or L)		

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Product @ 13.80' DTW: 13.84'
Tubing able to pierce through product and into water table
Clear, Sl. odor, Sl. Sheen

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40 mL Amber	1600		MW-406
EPH	↓	↓	2	1 L Amber	↓		↓

DUP-2

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/5/17	

TRC Personnel: Kollenkiea

Well ID: MW-407

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: ☐ 2 inch ☐ 4 inch ☐ 6 inch — Other: _____

WELL MATERIAL: ☒ PVC ☐ SS — Other: _____

Well Depth _____ ft. ☒ top of riser ☐ top of casing ☐ measured ☐ historical

Water Depth 14.57 ft. — Well Volume _____

LNAPL/DNAPL Depth = 14.54

NAPL Thickness = 0.03

Depth of pump intake: ~ 18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 350 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1515	1520	1525	1535	1540	1545	1550	1555	1600
Temp. (°C)	P	13.12	13.14	13.13	13.24	13.24	13.28	13.31	13.32
Conduct. (µmhos/cm)		18080	18065	17947	18014	18001	18013	18020	18035
DO (mg/L)	V	1.74	2.05	2.09	1.87	1.89	1.87	1.89	1.91
pH (su)	K	6.54	6.54	6.53	6.55	6.55	6.55	6.55	6.55
ORP (millivolts)	S	-116.6	-116.7	-114.8	-120.0	-126.0	-127.0	-128.1	-127.9
Turbidity (NTU)	E	11.11	10.16	5.52	3.77	3.09	2.65	2.37	3.15
Flow (ml/min)		350	350	350	350	350	350	350	350
Depth To Water (ft)	14.57	14.57	14.57	14.57	14.57	14.57	14.57	14.57	14.57
Cumulative Purge Vol. (gal or L)									

Time	1605	1610	1610			
Temp. (°C)	13.32	13.33	S			
Conduct. (µmhos/cm)	18016	18000	A			
DO (mg/L)	1.92	1.89	M			
pH (Std. Units)	6.55	6.55	P			
Eh/ORP (millivolts)	-129.2	-128.4	L			
Turbidity (NTU)	3.12	3.05	E			
Flow (ml/min)	350	350				
Depth To Water (ft)	14.57	14.57				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☒	☒
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: _____	☐	☐

Comments: faint sheen in water, dump in drum

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L A	1610		
VPH	N	HCl	3	40mL A	1610		

- Consult the applicable regulatory guidance for the specific criteria.

Signed: _____

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S 4003 | Project No.: 140483.0000 | Date/Time: 1/5/17 0845 | Sheet 1 of 1

TRC Personnel: BA | Well ID: MW-408

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch

Other:

WELL MATERIAL: [x] PVC [ ] SS

Other:

Well Depth ____ ft. ✓ top of riser; top of casing; ✓ measured; historical

Water Depth 13.36 ft.

Well Volume

LNAPL/DNAPL Depth = ____

NAPL Thickness = ____

Depth of pump intake: 19'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes): 280, 300

Flow rate at time of sampling: 300

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0845	0850	0855	0900	0905	0910	0915	0920	0925
Temp. (°C)	Start	10.31	11.08	10.98	11.39	11.46	11.36	11.35	11.38
Conduct. (µmhos/cm)	purge	6741	7592	7240	6697	6621	6774	6731	6744
DO (mg/L)	↓	6.31	7.69	6.44	7.41	7.24	6.91	6.44	7.31
pH (su)		6.87	6.91	6.86	6.79	6.78	6.76	6.75	6.75
ORP (millivolts)		-130.3	-128.8	-134.2	-151.3	-152.8	-150.8	-154.1	-153.7
Turbidity (NTU)		73.4	68.3	57.4	41.6	35.4	27.1	24.3	18.4
Flow (ml/min)	230	230	280	300	→	→	→	→	→
Depth To Water (ft)	13.36	13.39	13.39	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	0930	0935	0940	0945	0950
Temp. (°C)	11.41	11.63	11.33	11.46	11.60
Conduct. (µmhos/cm)	6725	6954	6568	6454	6457
DO (mg/L)	4.31	4.24	4.11	4.03	3.97
pH (Std. Units)	6.74	6.72	6.76	6.74	6.76
Eh/ORP (millivolts)	-155.5	-160.3	-163.4	-165.0	-162.1
Turbidity (NTU)	16.7	12.7	4.75	5.73	7.31
Flow (ml/min)	300	→	→	→	→
Depth To Water (ft)	13.39	→	→	→	→
Cumulative Purge Vol. (gal or L)					

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	3 40ML Amber	0950		MW-408
EPH	↓	↓	2	1L Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed:

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S — Project No.: 140113.0004.4403 — Date/Time: 1/4/17 1025 — Sheet 1 of 1

TRC Personnel: BA — Well ID: MW-409

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other:

WELL MATERIAL: [X] PVC [ ] SS — Other:

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ — [X] measured [ ] historical

Water Depth 13.08 ft. — Well Volume ____ — LNAPL/DNAPL Depth = ____ — NAPL Thickness = ____

Depth of pump intake: 15'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 220

Adjusted purge Rates/time/WL(record changes): 270

Flow rate at time of sampling: 270

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1035	1040	1045	1050	1055	1100	1105	1110	1115
Temp. (°C)	Start		12.23	12.29	12.37	12.50	12.85	12.66	12.14
Conduct. (µmhos/cm)	Purge		6057	7107	6688	6540	3568	6321	6440
DO (mg/L)	↓		6.97	~~6.99~~ 2.99	10.14	11.40	8.85	10.91	10.58
pH (su)	↓		6.85	6.71	6.64	6.70	6.70	6.69	6.67
ORP (millivolts)	↓		-130.0	-127.2	-134.1	-136.7	-133.3	-135.7	-139.9
Turbidity (NTU)	↓		21.6	14.1	10.2	8.16	5.01	7.91	7.31
Flow (ml/min)	~~220~~ 270	270	→	→	→	→	→	→	→
Depth To Water (ft)	~~13.05~~ 13.17	13.17	13.18	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1120	1125	1130	1135	1140	1145
Temp. (°C)	12.34	12.10	12.31	12.37	12.38	
Conduct. (µmhos/cm)	6315	6251	6166	6260	6269	
DO (mg/L)	9.92	9.54	7.93	7.35	7.39	
pH (Std. Units)	6.68	6.68	6.69	6.69	6.68	
Eh/ORP (millivolts)	-144.0	-145.9	-149.9	-150.3	-151.0	
Turbidity (NTU)	6.21	4.73	3.74	2.94	2.91	
Flow (ml/min)	270	→	→	→	→	
Depth To Water (ft)	13.18	→	→	→	→	
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, NO, NS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amber	1140		MW-409
VPH	↓	↓	3	40mL Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

…a Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth	140143	11/20/17	

TRC Personnel: Kolleen Mca

Well ID: MW-410

…INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: pumStaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up ______ ft. (from ground)

Riser Stick-up (from ground) ______ ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL

[X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [ ] top of riser [ ] top of casing [ ] ______ [ ] measured [ ] historical

Water Depth — ft.

Well Volume ______

LNAPL/DNAPL Depth = 13.02

NAPL Thickness = ______

Depth of pump intake: 18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min):

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 300 mL/m

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1135	1140	1145	1150	1155	1200	1205	1210	1215
Temp. (° C)	P	11.78	11.83	11.83	11.76	11.78	11.65	11.78	11.79
Conduct. (µmhos/cm)	U	31990	35260	35532	35898	36233	36653	36901	36920
DO (mg/L)	R	4.91	4.66	4.73	4.82	4.93	5.10	5.26	5.30
pH (su)	G	6.68	6.51	6.49	6.46	6.44	6.41	6.39	6.59
ORP (millivolts)	E	-74.2	-29.8	-27.8	-26.0	-24.3	-24.2	-39.6	-41.6
Turbidity (NTU)		22.2	12.7	8.07	8.04	5.59	2.84	2.98	2.98
Flow (ml/min)		300	300	300	300	300	300	300	300
Depth To Water (ft) manual	13.02	—	—	—	—	—	—	—	—
Cumulative Purge Vol. (gal or L)									

Time	1220	1225	1230	1230		
Temp. (° C)	11.81	11.80	11.79	S		
Conduct. (µmhos/cm)	37011	37121	37210	A		
DO (mg/L)	5.34	5.37	5.40	M		
pH (Std. Units)	6.37	6.37	6.37	P		
Eh/ORP (millivolts)	-43.3	-45.9	-46.2	L		
Turbidity (NTU)	1.25	0.89	1.20	E		
Flow (ml/min)	300	300	300			
Depth To Water (ft)	—	—	—			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: final DTW: 13.08 ft

dump ~6 gallons of water into labeled drum

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L	1230	NA	
VPH	N	HCl	3	40mL	1230	NA	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Mca

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	14043	1/4/17	

TRC Personnel: Kolleen Shea

Well ID: MW-411

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 12.86 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): ~18ft

Adjusted purge Rates/time/WL(record changes)

400@375@1040

Flow rate at time of sampling: 375ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1035	1040	1045	1050	1055	1100	1105	1110	1115
Temp. (°C)	[illegible]	13.73	13.71	13.68	13.70	13.68	13.66	13.67	13.67
Conduct. (µmhos/cm)	[illegible]	29071	28986	28983	28826	28826	28658	28126	29135
DO (mg/L)	[illegible]	1.01	.99	.56	.61	.52	.49	.49	.51
pH (su)	[illegible]	6.03	6.02	6.02	6.03	6.02	6.02	6.03	6.03
ORP (millivolts)	[illegible]	-39.3	-40.7	-46.6	-49.4	-52.9	-54.2	-57.9	-57.8
Turbidity (NTU)	[illegible]	5.50	4.60	4.12	4.05	4.39	4.05	3.82	3.92
Flow (ml/min)	400	400	375	375	375	375	375	375	375
Depth To Water (ft)	12.86	12.88	12.88	12.88	12.88	12.88	12.89	12.89	12.89
Cumulative Purge Vol. (gal or L)									

Time	1120	1125	1125			
Temp. (°C)	13.72	13.71	S			
Conduct. (µmhos/cm)	29139	29135	A			
DO (mg/L)	.51	.52	M			
pH (Std. Units)	6.02	6.02	P			
Eh/ORP (millivolts)	-58.3	-58.5	L			
Turbidity (NTU)	4.12	3.84	E			
Flow (ml/min)	375	375				
Depth To Water (ft)	12.89	12.89				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Baifer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
FPH	N	HCl	2	1LA	1125	None	
VPH	N	HCl	3	40mL A	1125	None	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Shea

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet ___ of ___
Specra	143140	1/5/17	Sheet 1 of 1

TRC Personnel: Kolleen Sullivan

Well ID: MW-412 (DUP-1)

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: ☐ 2 inch ☒ 4 inch ☐ 6 inch

Other: _____

WELL MATERIAL: ☒ PVC ☐ SS

Other: _____

Well Depth 15.47 ft. ☒ top of riser ☐ top of casing ☐ _____ ☐ measured ☐ historical

Water Depth 13.37 ft.

Well Volume _____

LNAPL/DNAPL Depth = _____

NAPL Thickness = Sheen

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 250 ml/min

Adjusted purge Rates/time/WL(record changes) 250 → 200 @1040

Flow rate at time of sampling: 200ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1035	1040	1045	1050	1055	1100	1105	1110	1115
Temp. (°C)	P	12.64	12.57	12.49	12.55	12.59	12.61	12.65	12.70
Conduct. (µmhos/cm)	U	30388	30392	30397	30385	30395	30365	30345	30355
DO (mg/L)	R	1.38	1.13	1.15	1.03	1.07	0.98	0.99	0.94
pH (su)	G	6.30	6.24	6.24	6.22	6.22	6.21	6.21	6.20
ORP (millivolts)	E	8.5	11.5	12.6	11.4	11.4	13.1	12.9	13.2
Turbidity (NTU)	T	21.0	12.5	11.0	9.21	7.28	6.65	7.10	6.44
Flow (ml/min)		250	250	200	200	200	200	200	200
Depth To Water (ft)		13.37	13.42	13.42	13.42	13.42	13.42	13.42	13.42
Cumulative Purge Vol. (gal or L)									

Time	1120	1125	1130	1130		
Temp. (°C)	12.68	12.67	12.66	S		
Conduct. (µmhos/cm)	30359	30316	30317	T		
DO (mg/L)	0.92	0.92	0.91	A		
pH (Std. Units)	6.19	6.18	6.19	B		
Eh/ORP (millivolts)	14.6	14.4	15.4	I		
Turbidity (NTU)	4.89	4.48	4.47	L		
Flow (ml/min)	200	200	200	I		
Depth To Water (ft)	13.42	13.42	13.42	Z		
Cumulative Purge Vol. (gal or L)				E		

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments: ~~fluffy brown ppt~~ fluffy brownish precipitate at bottom of purge bucket

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
TPH	N	HCl	2	1LA	1130	~~MW-12~~	DUP-1
VPH	N	HCl	3	40 MLA	1130	~~MW-12~~	DUP-1

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Sullivan

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S	Project No.: MOMS.00000493	Date/Time: 1/3/17 1030	Sheet 1 of 1
TRC Personnel: BA		Well ID: MW-413	

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL [X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [X] top of riser [ ] top of casing [ ] ______ [X] measured [ ] historical

Water Depth 13.71 ft.

Well Volume ______

LNAPL/DNAPL Depth = ______

NAPL Thickness = ______

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 330

Flow rate at time of sampling: 330

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1030	1035	1040	1045	1050	1055	1100	1105	1110
Temp. (°C)	Start	11.64	11.88	12.14	12.10	11.93	11.91	11.75	11.70
Conduct. (µmhos/cm)	Purge	26013	26174	27066	27641	27655	27806	27884	28030
DO (mg/L)	↓	5.21	4.95	4.29	4.02	3.88	3.30	3.59	1.80
pH (su)	↓	6.37	6.33	6.26	6.24	6.20	6.18	6.17	6.17
ORP (millivolts)	↓	-43.0	-41.4	-40.4	-38.7	-36.7	-34.5	-32.7	-30.2
Turbidity (NTU)	↓	54.3	37.9	31.7	26.9	23.4	20.2	15.6	13.1
Flow (ml/min)	300	330	→	→	→	→	→	→	→
Depth To Water (ft)	13.71	13.75	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1115	1120	1125	1130	1135	1140
Temp. (°C)	11.74	11.88	11.72	12.07	11.98	12.09
Conduct. (µmhos/cm)	28134	28165	28128	28197	28150	28141
DO (mg/L)	1.74	1.57	1.50	1.13	1.21	1.21
pH (Std. Units)	6.16	6.16	6.16	6.16	6.16	6.16
Eh/ORP (millivolts)	-29.4	-27.3	-26.2	-25.7	-24.9	-24.6
Turbidity (NTU)	13.4	12.8	10.41	8.85	7.41	7.43
Flow (ml/min)	330	→	→	→	→	→
Depth To Water (ft)	13.75	→	→	→	→	→
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Note: YSI DO readings high, recalibrated @ 1035, no readings thru - Start @ 1040
Clear, Sl. sheen, Sl. petro odor

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40mL Amber	1140		
EPH	↓	↓	2	1L Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth ERS	14443.4403	1/6/17 1235	

TRC Personnel: BA

Well ID: MW-414

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: ☐ 2 inch ☒ 4 inch ☐ 6 inch; Other:

WELL MATERIAL: ☒ PVC ☐ SS; Other:

Well Depth ___ ft. ☒ top of riser ☐ top of casing; ☒ measured ☐ historical (BA)

Water Depth 14.65 ft.

Well Volume

LNAPL/DNAPL Depth = ~~14.60~~ 14.60 (BA)

NAPL Thickness = 0.05 (BA)

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 330

Flow rate at time of sampling:

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1235	1240	1245	1250	1255	1300	1305	1310	1315
Temp. (°C)	Start	12.05	12.11	12.27	12.16	12.06	12.16	12.17	12.21
Conduct. (µmhos/cm)	Purge	26707	26731	26688	26367	26195	26055	25745	25640
DO (mg/L)	↓	6.31	6.36	6.41	6.50	6.54	6.58	6.64	6.69
pH (su)		6.26	6.26	6.24	6.22	6.21	6.21	6.21	6.21
ORP (millivolts)		-32.4	-33.1	-35.1	-38.4	-34.3	-40.3	-42.2	-43.2
Turbidity (NTU)		42.7	33.9	31.6	22.5	17.2	13.9	9.31	8.84
Flow (ml/min)	300	330	→						→
Depth To Water (ft)	14.65	→							→
Cumulative Purge Vol. (gal or L)									

Time	1320					
Temp. (°C)	12.22					
Conduct. (µmhos/cm)	25480					
DO (mg/L)	6.70					
pH (Std. Units)	6.21					
Eh/ORP (millivolts)	-43.7					
Turbidity (NTU)	7.31					
Flow (ml/min)	330					
Depth To Water (ft)	14.65					
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, sl petro odor, sheen

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40mL Amber	1320		MW-414
EPH	↓	↓	2	1L Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectrulymouth CS | Project No.: 14M43.000.4603 | Date/Time: 1/5/17 1310 | Sheet 1 of 1

TRC Personnel: BA | Well ID: MW-415

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL: [X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [X] top of riser [ ] top of casing ______ [X] measured [ ] historical

Water Depth 15.35 ft.

Well Volume ______

LNAPL/DNAPL Depth = ______

NAPL Thickness = ______

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 260

Adjusted purge Rates/time/WL(record changes): 300, 330

Flow rate at time of sampling: 330

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1310	1315	1320	1325	1330	1335	1340	1345	1350
Temp. (°C)	Start	13.03	13.45	13.33	13.65	13.58	13.98	14.01	13.83
Conduct. (µmhos/cm)	Purge	25452	25446	25622	25768	25797	25953	26093	26100
DO (mg/L)	↓	1.79	1.89	1.76	1.34	1.22	0.51	0.99	1.05
pH (su)		6.78	6.75	6.72	6.72	6.72	6.72	6.76	6.73
ORP (millivolts)		-43.1	-56.2	-67.8	-72.7	-74.6	-81.0	-85.3	-88.4
Turbidity (NTU)		7.86	4.97	3.98	2.86	2.63	1.65	1.37	1.21
Flow (ml/min)	260	300	330	→					
Depth To Water (ft)	15.35	15.39	→						
Cumulative Purge Vol. (gal or L)									

Time	1355	1400	1405	1410	1415	1420
Temp. (°C)	13.84	13.87	13.86	13.86	14.03	14.01
Conduct. (µmhos/cm)	26069	26031	26100	26059	26071	26107
DO (mg/L)	1.19	1.24	1.37	1.55	1.41	1.39
pH (Std. Units)	6.73	6.73	6.73	6.74	6.74	6.74
Eh/ORP (millivolts)	-89.4	-93.4	-97.6	-98.3	-101.2	-103.4
Turbidity (NTU)	0.99	0.91	0.89	0.75	0.59	0.61
Flow (ml/min)	330	→				
Depth To Water (ft)	15.39	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, Sheen, Sl. Petro odor

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40mL Amber	1420		MW-415
EPH	↓	↓	2	1 L Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S | Project No.: 420143.0000 | Date/Time: 1/3/17 0945 | Sheet 1 of 8

TRC Personnel: BA | Well ID: BMW-41B

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): N/A ft.

Riser Stick-up (from ground): N/A ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: ____

WELL MATERIAL: [X] PVC [ ] SS — Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ | [X] measured [ ] historical

Water Depth 11.32 ft. | Well Volume ____ | LNAPL/DNAPL Depth = ____ | NAPL Thickness = ____

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 240 ML/MIN

Adjusted purge Rates/time/WL(record changes): 270 ML/MIN

Flow rate at time of sampling: 270 m/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0945	0950	0955	1000	1005	1010	1015	1020	1025
Temp. (°C)	Start Purge	11.93	11.91	11.81	11.98	11.86	11.90	11.94	
Conduct. (µmhos/cm)			3174.6	3044.6	3369.0	3571.6	3361.6	3476.1	3481.0
DO (mg/L)		2.21	1.99	1.87	2.11	2.31	2.39	2.41	2.68
pH (su)		6.24	6.25	6.27	6.28	6.28	6.29	6.29	6.29
ORP (millivolts)		191.3	190.1	186.1	181.7	173.4	171.6	174.3	173.7
Turbidity (NTU)		OOR	24.6	24.7	22.7	19.3	17.6	15.5	17.1
Flow (ml/min)	240	270							
Depth To Water (ft)	11.32	11.37	11.37	11.38					
Cumulative Purge Vol. (gal or L)									

Time	1030	1035	1040	1045	1050	1055
Temp. (°C)	12.15	12.10	12.04	12.00	12.14	12.22
Conduct. (µmhos/cm)	3561.3	3571.0	3592	4016.0	3950.1	3957.6
DO (mg/L)	2.71	2.81	3.02	3.16	3.30	3.17
pH (Std. Units)	6.29	6.30	6.31	6.28	6.29	6.29
Eh/ORP (millivolts)	172.9	174.0	172.8	173.1	169.1	168.3
Turbidity (NTU)	16.7	17.2	17.0	22.1	10.01	8.27
Flow (ml/min)	270					
Depth To Water (ft)	10.38					
Cumulative Purge Vol. (gal or L)					5 gal	

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments: Clear, No, No

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	~~ASTM~~ HCl	2	1L Amber	1055		MW-41B (D)
VPH	↓	HNO_3	3	3 40mL	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: ____

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	11/3/17 0955	

TRC Personnel: Kaileen Shea

Well ID: MW417

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth — ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 11.05 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~17 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 200 ml/min

Adjusted purge Rates/time/WL(record changes) 200 @ 150 @ 1000

Flow rate at time of sampling: 150ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0955	1000	1005	1010	1015	1020	1025	1030	1035
Temp. (°C)	11.62	11.93	11.93	11.94	11.94	11.95	11.99	12.03	12.11
Conduct. (µmhos/cm)	36131	35965	35964	35989	35954	36017	36052	36103	36152
DO (mg/L)	1.33	1.40	1.39	1.38	1.35	1.36	1.26	1.21	1.17
pH (su)	6.62	6.38	6.37	6.35	6.33	6.33	6.33	6.32	6.30
ORP (millivolts)	63.3	104.36	117.5	115.6	117.0	119.1	122.3	126.3	126.4
Turbidity (NTU)	19.37	15.53	15.41	14.32	12.91	10.51	9.97	9.56	10.01
Flow (ml/min)	200	150	150	150	150	150	150	150	150
Depth To Water (ft)	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07
Cumulative Purge Vol. (gal or L)									

Time	1040	1045				
Temp. (°C)	12.12	S				
Conduct. (µmhos/cm)	36163	A				
DO (mg/L)	1.17	M				
pH (Std. Units)	6.30	P				
Eh/ORP (millivolts)	126.9	L				
Turbidity (NTU)	9.98	E				
Flow (ml/min)	150					
Depth To Water (ft)	11.07					
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
TPH	N	HCl	3	1LA	1045	None	MW-417
VPH	N	HCl	3	40mLA	1045	None	

* Consult the applicable regulatory guidance for the specific criteria.

Signed: Kaileen Shea

Rev: April 2014

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	Acornell	Well ID:	MW-205		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	22.08 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	14.69 ft	Start Time:	1122 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	1240 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	20 ft	Total Volume Pumped:	3.3 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	7.12	-9.9	24297.3	0.13	10.97	7.39	14.74	350
360	7.09	-10	24682.0	0.1	10.97	7.12	14.74	350
540	7.11	-10.1	24774.8	0.09	10.97	6.58	14.74	350
720	7.11	-11.6	24785.6	0.07	11.01	6.24	14.74	350
900	7.10	-10.6	24854.7	0.07	11.05	6.56	14.74	350
1080	7.11	-10.4	24751.0	0.06	11.04	4.53	14.74	350
1260	7.1	-10.6	24779.9	0.06	11.02	4.3	14.74	350
1440	7.1	-10.6	24721.4	0.07	11.01	3.65	14.74	350
1620	7.1	-10.6	24708.5	0.07	11.04	3.48	14.74	350
1800	7.11	-10.4	24541.9	0.07	11.01	2.95	14.74	350
1980	7.10	-10.6	24534.2	0.06	11.01	3.32	14.74	350
2160	7.11	-10.6	24531.0	0.07	11.03	2.77	14.74	350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1240	N	MW-205
EPH-10	N	HCL	2	1L A	1240	N	MW-205

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	Acornell	Well ID:	MW-401		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	25.08 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	14 ft	Start Time:	1020 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min	Sample Collected:	1120 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	20 ft	Total Volume Pumped:	4.5 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	7.33	-16.2	40815.7	2.53	11.64	94.4	14.04	350
360	7.42	-14.2	40319.1	2.51	11.86	80.6	14.05	350
540	7.42	-9.5	39856.0	2.48	11.93	67.8	14.05	350
720	7.4	-6	39633.1	2.36	11.94	43.8	14.05	350
900	7.37	-3.8	39337.3	2.23	11.94	43.5	14.05	350
1080	7.37	-1.5	39202.2	2.04	11.93	32.2	14.05	350
1260	7.36	0.3	38948.0	1.91	11.89	24.9	14.05	350
1440	7.37	0.7	38867.9	1.78	11.89	20.20	14.05	350
1620	7.36	1.6	38742.9	1.62	11.85	15.7	14.05	350
1800	7.35	2.6	38691.2	1.44	11.85	12.3	14.05	350
1980	7.34	3.4	38581.3	1.23	11.85	10.3	14.05	350
2160	7.34	3.8	38537.0	1.06	11.88	8.34	14.05	350
2340	7.33	4.4	38435.7	0.88	11.85	7.49	14.05	350
2520	7.34	5.3	38340.7	0.75	11.85	5.48	14.05	350
2700	7.33	5.6	38328.0	0.64	11.87	4.83	14.05	350
2882	7.33	6.6	38291.4	0.55	11.89	4.44	14.05	350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1120	N	MW-401
EPH-10	N	HCL	2	1L A	1120	N	MW-401

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	Acornell	Well ID:	MW-402		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	25.14 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	15.24 ft	Start Time:	1305 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min	Sample Collected:	1345 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	20 ft	Total Volume Pumped:	3.6 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.9	45.7	24971.2	0.99	11.11	42.5	15.27	350
360	6.87	43.7	24130.1	0.91	10.97	21.9	15.28	350
540	6.91	37.8	23226.8	0.83	10.92	15.9	15.28	350
720	6.92	30.2	22497.4	0.75	10.92	10.9	15.28	350
901	6.94	16.3	21889.4	0.68	10.97	6.19	15.28	350
1082	6.95	8.9	21261.8	0.63	11.11	5.29	15.28	350
1262	6.96	0.3	20672.4	0.58	11.14	3.4	15.28	350
1442	6.97	-3.1	20338.4	0.57	11.11	2.80	15.28	350
1622	6.96	-6.5	20012.1	0.54	11.15	2.38	15.29	350
1802	6.97	-10.5	19630.9	0.51	11.18	2.17	15.29	350
1982	6.98	-20.3	19142.3	0.47	11.20	3.35	15.3	350
2162	7	-24.4	18846.5	0.45	11.20	1.96	15.3	350
2342	7	-28.6	18661.5	0.42	11.19	2.21	15.3	350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40mlV	1345	N	MW-402
EPH-10	N	HCL	2	1LA	1345	N	MW-402

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/23/2017	Turbidity Make/Model:	HACH		
Operator Name:	ACornell	Well ID:	MW-404		
Company Name:	TRC	Well diameter:	in. PVC	Page 1 of 2	
Project Name:	140143.0000.4903	Well Total Depth:	20 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.52 ft	Start Time:	0945 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min	Sample Collected:	1100 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	17 ft	Total Volume Pumped:	7.2 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
181	6.28	38.3	40026.5	0.27	8.90	18.3	13.14	350
361	6.32	32.9	39586.0	0.19	9.38	23.9	13.16	350
541	6.33	31.1	39356.6	0.16	9.61	25	13.16	350
721	6.33	30	39261.5	0.13	9.62	18.3	13.16	350
901	6.33	29.7	39195.9	0.13	9.66	36.8	13.16	350
1081	6.34	29.4	39245.7	0.11	9.66	19.5	13.16	350
1261	6.35	29.4	39222.0	0.11	9.68	24.4	13.16	350
1441	6.36	29.3	39378.6	0.1	9.68	27.3	13.16	350
1621	6.35	29.4	39382.0	0.1	9.71	24.5	13.16	350
1801	6.35	29.5	39232.7	0.1	9.73	10.8	13.16	350
1981	6.36	29.6	39252.1	0.1	9.70	8.63	13.16	350
2161	6.35	29.8	39187.6	0.09	9.71	8.26	13.16	350
2341	6.34	30	39158.6	0.09	9.80	7.02	13.16	350
2521	6.35	30.2	39005.2	0.09	9.84	7.5	13.16	350
2701	6.35	29.2	38931.7	0.09	9.85	6.17	13.16	350
2881	6.36	26.4	38518.6	0.08	9.95	7.13	13.16	350
3061	6.36	24.9	38196.6	0.08	10.06	19	13.16	350
3241	6.34	24.3	38027.2	0.08	10.08	7.92	13.16	350
3421	6.34	24.2	37700.5	0.08	10.11	8.12	13.16	350
3601	6.34	24.2	37547.8	0.08	10.18	10.4	13.16	350
3780	6.34	24.5	37240.6	0.07	10.23	10.1	13.16	350
3960	6.32	24.8	37281.4	0.07	10.24	11.5	13.16	350
4140	6.33	25	37151.2	0.07	10.31	7.82	13.16	350
4320	6.32	24.9	37027.8	0.07	10.31	6.73	13.16	350

Low-Flow System Sampling

Date:	3/23/2017	Turbidity Make/Model:	HACH		
Operator Name:	Acornell	Well ID:	MW-404		
Company Name:	TRC	Well diameter:	in. PVC	Page 2 of 2	
Project Name:	140143.0000.4903	Well Total Depth:	20 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.52 ft	Start Time:	0945 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min	Sample Collected:	1100 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	17 ft	Total Volume Pumped:	7.2 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
4500	6.32	25	36939.8	0.07	10.32	6.62	13.16	350
4680	6.33	25	36914.1	0.07	10.35	6.5	13.16	350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1100	N	MW-404
EPH-10	N	HCL	2	1L A	1100	N	MW-404

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/23/2017	Turbidity Make/Model:	HACH		
Operator Name:	Acornell	Well ID:	MW-405		
Company Name:	TRC	Well diameter:	4 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	21 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	14.75 ft	Start Time:	1130 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min	Sample Collected:	1205 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	18 ft	Total Volume Pumped:	3 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.45	74.5	5277.3	0.76	12.70	1.59	14.75	350
360	6.38	75.4	4935.4	0.8	12.77	1.2	14.75	350
540	6.33	75.2	4940.9	0.8	12.84	0.58	14.75	350
720	6.32	74.5	4698.3	0.78	12.89	0.6	14.75	350
900	6.30	74	4618.7	0.77	12.86	0.45	14.75	350
1080	6.29	73.6	4479.4	0.76	12.83	0.92	14.75	350
1260	6.3	72.3	4186.5	0.74	12.76	0.41	14.75	350
1440	6.28	72.2	4274.4	0.72	12.76	0.57	14.75	350
1620	6.28	71.4	4225.3	0.7	12.73	0.28	14.75	350
1800	6.27	71.2	4222.6	0.68	12.72	0.31	14.75	350
1980	6.26	71	4172.3	0.67	12.81	0.22	14.75	350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1205	N	MW-405
EPH-10	N	HCL	2	1L A	1205	N	MW-405

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH	Page 1 of 1	
Operator Name:	Acornell	Well ID:	MW-406		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	23 ft	Depth to Product:	13.93 ft
Site Name:	Weymouth C/S	Screen Length:	15 ft	Product Thickness:	0.02
Tubing Type:	LDPE	Depth to Water:	13.95 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min		
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec	Start Time:	1025 hrs
Pump in take:	20 ft	Total Volume Pumped:	3 gallons	Sample Collected:	1100 hrs
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	5.85	-57	28930.8	0.05	12.65	2.35		350
360	5.87	-59.4	29802.3	0.02	12.54	2.28		350
540	5.88	-59.6	31613.3	0.03	12.57	3.71		350
720	5.91	-61.6	32248.8	0.01	12.63	1.65		350
900	5.93	-64.5	32816.8	0.01	12.67	1.5		350
1080	5.94	-67.9	33362.1	-0.01	12.72	1.48		350
1260	5.95	-72.2	33500.9	-0.02	12.74	1.67		350
1440	5.96	-76.9	34357.1	-0.03	12.76	1.58		350
1620	5.97	-79.4	34401.1	-0.03	12.77	1.68		350
1800	5.97	-83.1	34630.0	-0.03	12.81	1.11		350
1980	5.98	-84.9	34752.9	-0.02	12.82	1.52		350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1100	N	MW-406
EPH-10	N	HCL	2	1L A	1100	N	MW-406

Notes: Water measurements are from top of PVC. DTW was not recorded during sampling due to the thick viscous product.
Dup sample collected.

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH	Page 1 of 1	
Operator Name:	ACornell	Well ID:	MW-407		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	25.14 ft	Depth to Product:	14.42ft
Site Name:	Weymouth C/S	Screen Length:	15 ft	Product Thickness:	1 ft
Tubing Type:	LDPE	Depth to Water:	15.42 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	350 mL/min		
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec	Start Time:	1250 hrs
Pump in take:	20 ft	Total Volume Pumped:	3 gallons	Sample Collected:	1330 hrs
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.36	28	40195.9	0.82	12.68	25.4		350
360	6.4	24.2	40231.8	0.7	12.58	22.6		350
540	6.39	21.5	40153.9	0.6	12.52	23.9		350
720	6.4	19	40171.0	0.51	12.49	24.8		350
901	6.40	17.1	40142.0	0.43	12.54	20.2		350
1082	6.42	15.9	40147.7	0.35	12.58	22.9		350
1262	6.41	15.2	40153.0	0.29	12.58	23.2		350
1442	6.42	14.1	40026.7	0.23	12.61	23.00		350
1622	6.43	14	40086.2	0.18	12.62	25.3		350
1802	6.45	13.9	40142.9	0.14	12.58	23.4		350
1982	6.45	13.8	40024.9	0.11	12.63	24.6		350

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1330	N	MW-407
EPH-10	N	HCL	2	1L A	1330	N	MW-407

Notes: Water measurements are from top of PVC. DTW was not recorded during sampling due to the thick viscous product.

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	ACornell	Well ID:	MW-412		
Company Name:	TRC	Well diameter:	4 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.52 ft	Start Time:	1045 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	1120 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	18 ft	Total Volume Pumped:	2.9 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.13	7.1	34596.2	0.14	10.70	8.65	13.46	300
360	6.12	6.1	33848.7	0.11	10.73	25.5	13.46	300
540	6.1	6.1	33361.5	0.09	10.92	5.65	13.46	300
720	6.1	5.6	33062.4	0.07	11.18	5.18	13.46	300
900	6.11	5	32703.5	0.06	11.15	2.69	13.46	300
1080	6.1	4.8	32349.3	0.06	11.09	3.59	13.46	300
1260	6.13	4.2	32207.7	0.06	11.07	3.97	13.46	300
1440	6.13	2.6	32104.3	0.05	10.92	3.37	13.46	300
1620	6.1	4	32409.6	0.05	11.06	3.68	13.46	300
1800	6.10	4.2	31842.1	0.05	11.15	3.3	13.46	300
1980	6.12	4.3	31922.8	0.04	11.11	3.28	13.46	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1120	N	MW-412
EPH-10	N	HCL	2	1L A	1120	N	MW-412

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	Annie	Well ID:	MW-413		
Company Name:	TRC	Well diameter:	4 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.98 ft	Start Time:	0930 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	150 mL/min	Sample Collected:	1015 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	19 ft	Total Volume Pumped:	2 gallons		
Sonde SN:	452165				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.2	-7.1	18935.6	6.54	11.20	66.2	13.82	150
360	6.22	-16.7	19820.3	6.15	11.10	50.8	13.81	150
540	6.23	-20.5	20503.2	5.89	10.96	49.6	13.81	150
900	6.23	-25	21230.1	5.46	10.92	32.9	13.81	150
1080	6.23	-26	21523.2	5.28	10.85	25.9	13.81	150
1260	6.22	-29.8	21810.5	5.13	10.90	23.5	13.81	150
1440	6.22	-28.4	21963.7	4.99	10.84	18.2	13.81	150
1620	6.21	-27	22096.0	4.83	10.87	14.2	13.81	150
1800	6.21	-26.7	22243.7	4.66	10.84	13.1	13.81	150
1980	6.21	-27.8	22412.3	4.49	10.83	14.7	13.81	150
2161	6.2	-26.6	22441.7	4.35	10.83	14.4	13.81	150
2341	6.2	-26.9	22539.9	4.21	10.83	11.1	13.81	150
2521	6.19	-26.4	22558.9	4.03	10.92	11.20	13.81	150
2701	6.19	-25.6	22631.1	3.89	10.99	10.8	13.81	150

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1015	N	MW-413
EPH-10	N	HCL	2	1L A	1015	N	MW-413

Notes: Water measurements are from top of PVC.

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH	Page 1 of 1	
Operator Name:	BAyers	Well ID:	MW-201		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	20.41 ft	Depth to Product:	13.70 ft
Site Name:	Weymouth C/S	Screen Length:	15 ft	Product Thickness:	0.17
Tubing Type:	LDPE	Depth to Water:	13.87 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min		
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec	Start Time:	1136 hrs
Pump in take:	20 ft	Total Volume Pumped:	6 gallons	Sample Collected:	1155 hrs
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	6.96	-247.1	27161	-0.08	13.46	0.86	13.89	300
600	6.97	-221.4	27472.2	-0.07	12.96	0.74	13.89	300
900	6.96	-211.8	27484.0	-0.08	12.99	0.81	13.89	300
1200	6.94	-207.3	27474.6	-0.08	12.93	0.73	13.89	300
1500	6.93	-204.1	27532.8	-0.07	12.91	0.74	13.89	300
1800	6.93	-203.1	27669.0	-0.08	12.74	0.97	13.89	300
2100	6.93	-202.4	27555.1	-0.08	12.80	1.08	13.89	300
2400	6.92	-202.7	27569.5	-0.09	12.81	1.01	13.89	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1155	N	MW-201
EPH-10	N	HCL	2	1L A	1155	N	MW-201

Notes: Heavy product, groundwater purged for approximately 3 gallons before water quality parameters gauged/taken, clear, petro odor, sheen in bucket. DTW is not measured due to the thick viscous product.

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	BAyers	Well ID:	MW-204		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	20 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.84 ft	Start Time:	1150 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	1245 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec		
Pump in take:	19 ft	Total Volume Pumped:	0 gallons		
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	6.73	-104.7	35100.6	0.15	12.48	19.4	13.86	300
600	6.76	-113.2	35696.8	0.13	12.26	13.6	13.86	300
900	6.78	-117.1	35579.7	0.11	12.42	9.31	13.86	300
1200	6.79	-116.7	35456.1	0.1	12.48	5.96	13.86	300
1500	6.79	-111.9	35647.0	0.32	12.58	4.32	13.86	300
1800	6.79	-108.7	35592.9	0.16	12.57	4.09	13.86	300
2100	6.79	-98.5	35549.5	0.1	12.61	3.96	13.86	300
2400	6.78	-81.2	35461.0	0.09	12.70	4.21	13.86	300
2700	6.76	-63.4	35707.8	0.2	12.47	3.71	13.86	300
3000	6.75	-61.1	35597.7	0.18	12.57	3.67	13.86	300
3300	6.75	-56.9	35540.5	0.18	12.66	3.51	13.86	300
3600	6.74	-53.9	35564.7	0.15	12.62	3.27	13.86	300
3900	6.74	-53.5	35518.7	0.14	12.66	3.19	13.86	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1245	N	MW-204
EPH-10	N	HCL	2	1L A	1245	N	MW-204

Notes: Clear no odor, no sheen, Water measurements are from top of PVC

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	BAyers	Well ID:	MW-400		
Company Name:	TRC	Well diameter:	in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	12.88 ft	Start Time:	1320 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	1415 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec		
Pump in take:	19 ft	Total Volume Pumped:	0 gallons		
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	-	-	-	-	-	-	-	-
600	6.61	-13.2	44144.0	0.11	13.25	5.21	12.96	300
900	6.61	-15.6	44044	0.11	13.26	3.46	12.98	300
1200	6.62	-43.4	43909.0	0.09	13.37	1.56	12.98	300
1500	6.62	-49	43845.0	0.08	13.48	1.37	12.98	300
1800	6.61	-41	43757.0	0.07	13.57	0.66	12.98	300
2100	6.6	-10.5	43726.0	0.06	13.66	0.56	12.98	300
2400	6.55	72.1	43652	0.06	13.61	0.39	12.98	300
2700	6.54	64.4	43639	0.06	13.66	0.32	12.98	300
3000	6.54	63.6	43589.8	0.06	13.68	0.2	12.98	300
3300	6.53	63.1	43550.9	0.06	13.7	0.19	12.98	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1415	N	MW-400
EPH-10	N	HCL	2	1L A	1415	N	MW-400

Notes: Purged first 5 minutes, clear no odor, no staining, water measurements are from top of PVC

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	BAyers	Well ID:	MW-403		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 2	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.51 ft	Start Time:	1030 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	1215 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec		
Pump in take:	20 ft	Total Volume Pumped:	0 gallons		
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	-	-	-	-	-	-	-	-
600	6.75	-104.6	43441	0.95	8.47	2.96	13.51	300
900	6.75	-115.1	43314.3	0.68	8.17	2.47	13.51	300
1200	6.74	-122.3	42665.1	0.49	8.17	2.4	13.51	300
1500	6.75	-128.4	41920.8	0.38	8.03	1.31	13.51	300
1800	6.75	-133.2	40897.2	0.29	8.22	0.86	13.51	300
2100	6.78	-137.1	39486.3	0.24	8.33	0.73	13.51	300
2400	6.8	-142	38640.0	0.18	8.35	0.69	13.51	300
2700	6.83	-144.3	37634.0	0.11	8.12	1.28	13.51	300
3000	6.84	-148.7	36282.4	0.09	8.37	1.18	13.51	300
3300	6.88	-149.6	35109.8	0.08	8.26	0.17	13.51	300
3600	6.9	-149.9	34607.1	0.07	8.37	0.39	13.51	300
3900	6.92	-149.9	34105.3	0.06	8.65	0.68	13.51	300
4200	6.93	-150.6	34053.9	0.06	8.93	0.71	13.51	300
4500	6.95	-150.4	33075.0	0.08	9.32	0.53	13.51	300
4800	6.95	-148.2	32693.3	0.1	9.41	0.69	13.51	300
5100	6.95	-147.2	30742.5	0.14	9.45	0.75	13.51	300
5400	6.92	-146.8	31848.4	0.16	9.21	0.79	13.51	300
5700	6.91	-144.7	31260	0.2	8.70	0.71	13.51	300
6000	6.9	-142.9	30439.8	0.22	8.65	0.6	13.51	300
6300	6.91	-141.2	30129.9	0.22	8.62	0.60	13.51	300
6600	6.92	-138.6	28828.1	0.27	8.51	0.57	13.51	300

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	BAyers	Well ID:	MW-403		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 2 of 2	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	15.42 ft	Start Time:	1030 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	1215 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec		
Pump in take:	20 ft	Total Volume Pumped:	0 gallons		
Sonde SN:	358315				

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1215	N	MW-403
EPH-10	N	HCL	2	1L A	1215	N	MW-403

Notes: Purged first 5 minutes, clear, no odor, no sheen, water measurements are from top of PVC

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	BAyers	Well ID:	MW-411		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.37 ft	Start Time:	0840 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	0930 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec		
Pump in take:	20 ft	Total Volume Pumped:	0 gallons		
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	-	-	-	-	-	-	-	-
600	6.31	-47.5	44110.6	0.05	11.28	15.3	13.38	300
900	6.51	-107.8	42757.7	-0.07	12.34	10.9	13.38	300
1200	6.54	-145.8	40587.4	-0.08	11.78	20.3	13.38	300
1500	6.53	-162.9	39579.8	-0.09	11.74	7.31	13.38	300
1800	6.51	-176.5	38790.3	-0.11	12.38	4.26	13.38	300
2100	6.52	-178.9	38984.6	-0.1	11.88	4.07	13.38	300
2400	6.54	-180.4	38443.6	-0.11	12.19	3.75	13.38	300
2700	6.53	-184.3	38511.1	-0.11	12.14	2.46	13.38	300
3000	6.52	-184.3	38481.4	-0.11	12.10	1.47	13.38	300
3300	6.53	-188.6	38725.3	-0.11	11.60	1.39	13.38	300
3600	6.63	-67.2	38391.6	10.76	10.71		13.38	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	930	N	MW-411
EPH-10	N	HCL	2	1L	930	N	MW-411

Notes: Purged first 5 minutes, clear, no oil, no sheen, water measurements are from top of PVC

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH	Page 1 of 1	
Operator Name:	BAyers	Well ID:	MW-414		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	23 ft	Depth to Product:	14.42 ft
Site Name:	Weymouth C/S	Screen Length:	15 ft	Product Thickness:	1 ft
Tubing Type:	LDPE	Depth to Water:	15.42 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min		
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec	Start Time:	1335 hrs
Pump in take:	20 ft	Total Volume Pumped:	0 gallons	Sample Collected:	1425 hrs
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	6.66	-186.2	37622	0.09	13.52	3.31	15.44	300
600	6.63	185.2	37740	0.05	13.41	2.95	15.44	300
900	6.63	-188.8	37885.2	-0.01	13.36	2.3	15.44	300
1200	6.64	-196.7	37806.8	-0.04	13.48	2.14	15.44	300
1500	6.68	-198	37787.6	-0.06	13.54	2.01	15.44	300
1800	6.64	-199.4	37393.5	-0.07	13.41	1.39	15.44	300
2100	6.52	-200.6	37822.3	-0.08	13.43	1.97	15.44	300
2400	6.5	-201.9	37625.7	-0.09	13.33	1.84	15.44	300
2700	6.5	-202.8	37354.0	-0.1	13.39	1.73	15.44	300
3000	6.5	-203.6	38076.2	-0.1	13.30	1.69	15.44	300
3300	6.5	-204.2	37963	-0.1	13.21	1.58	15.44	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1425	N	MW-414
EPH-10	N	HCL	2	1L A	1425	N	MW-414

Notes: Began purging MW-414 at 1305 will purge 3 gallons before collecting WQIP. Clear, N/O. N/S LNAPL observed. Water measurements are from top of PVC. DTW is not measured due to the thick viscous product.

Low-Flow System Sampling

Date:	3/23/2017	Turbidity Make/Model:	HACH		
Operator Name:	BAyers	Well ID:	MW-417		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	23 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	11.16 ft	Start Time:	0940 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	300 mL/min	Sample Collected:	1040 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	300 sec		
Pump in take:	17 ft	Total Volume Pumped:	0 gallons		
Sonde SN:	358315				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
300	-	-	-	-	-	-	-	-
600	7.59	-54.9	1911.2	0.97	9.4	37.3	11.16	300
900	7.21	-83.5	2682.6	0.55	9.68	26	11.16	300
1200	7.19	-89.7	2711.6	0.47	9.74	23.6	11.16	300
1500	7.17	-91.8	2751.3	0.39	9.78	18.7	11.16	300
2100	7.24	-107.4	2774.9	0.33	9.78	13.6	11.16	300
2400	7.26	-123.7	2755.0	0.29	9.82	8.61	11.16	300
3000	7.26	-136.2	2721.2	0.24	9.93	5.31	11.16	300
3300	7.26	-139.5	2682.3	0.23	10.15	4.71	11.16	300
3900	7.26	-148.9	2697.9	0.2	10.22	3.16	11.16	300
4200	7.36	-149.7	2667.3	0.2	10.12	2.93	11.16	300
4500	7.38	-152.8	2655.7	0.17	10.06	2.26	11.16	300
4800	8.36	-87	0.0	11.96	10.66	2.16	11.16	300

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40ml V	1040	N	MW-417
EPH-10	N	HCL	2	1L A	1040	N	MW-417

Note: Purge first 5 minutes, water measurements are from top of PVC. Dup sample collected.

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	L.Hopp	Well ID:	MW-202		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	19.95 ft	Page 1 of 1	
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	12.64 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Start Time:	1330 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec	Sample Collected:	1406 hrs
Pump in take:	16.3 ft	Total Volume Pumped:	3.3 gallons		
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.54	459.6	30631.8	0.22	10.4	56.6	12.66	250
360	6.49	409.9	30647.1	0.16	10.33	25.1	12.67	250
540	6.48	382.4	30505.3	0.17	10.35	15.9	12.67	250
720	6.48	368.6	30189.5	0.14	10.31	11.8	12.67	250
900	6.48	362.4	29917.5	0.13	10.32	10.8	12.67	250
1080	6.47	360.2	29828.0	0.12	10.36	10.0	12.67	250
1260	6.47	359.2	29772.8	0.12	10.36	7.04	12.67	250
1440	6.47	362.7	29699.4	0.12	10.27	6.85	12.67	250
1620	6.47	364.7	29555.4	0.12	10.31	5.64	12.67	250
1800	6.47	376.2	29436.7	0.12	10.27	4.39	12.67	250
1980	6.47	387.5	29422.3	0.11	10.3	2.1	12.67	250
2160	6.47	388.2	29306.1	0.12	10.29	1.82	12.67	250
2340	6.47	390.8	29318.4	0.12	10.27	1.3	12.67	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40mL V	1406	N	MW-202
EPH-10	N	HCL	2	1 L A	1406	N	MW-202

Notes: Water measures are from top of PVC.

Low-Flow System Sampling

Date:	3/20/2017	Turbidity Make/Model:	HACH		
Operator Name:	L.Hopp	Well ID:	MW-203		
Company Name:	TRC	Well diameter:	2 in PVC		
Project Name:	140143.0000.7478	Well Total Depth:	20.62 ft	Page 1 of 1	
Site Name:	Weymouth C/S	Screen Length:	10 ft		
Tubing Type:	LDPE	Depth to Water:	12.96 ft	Start Time:	1200 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	1233 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	16.8 ft	Total Volume Pumped:	3 gallons		
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.43	522.3	36442.5	0.13	11.67	25.5	13.03	250
360	6.45	548.9	36236.2	0.21	11.61	6.89	13.04	250
540	6.46	561.8	36037.7	0.3	11.61	4.21	13.04	250
720	6.46	570.4	35943.5	0.38	11.61	2.95	13.04	250
900	6.44	578.5	35882.9	0.45	11.65	2.89	13.04	250
1080	6.43	589.3	35842.2	0.52	11.67	2.7	13.04	250
1260	6.43	597.2	35713	0.57	11.66	2.9	13.04	250
1440	6.43	607.2	35699.2	0.61	11.66	1.11	13.06	250
1620	6.43	611.9	35660.2	0.64	11.66	1.25	13.06	250
1800	6.43	618.8	35575.5	0.67	11.65	0.95	13.06	250
1980	6.43	624.7	35606	0.69	11.65	0.85	13.06	250
2160	6.43	629.9	35551.5	0.7	11.67	0.75	13.06	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	3 40mL V	1233	N	MW-203
EPH-10	N	HCL	2	1 L A	1233	N	MW-203

Notes: Water measures are from top of PVC.

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	L.Hopp	Well ID:	MW-206		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 2	
Project Name:	140143.0000.4903	Well Total Depth:	20.98 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	14.46 ft	Start Time:	1035 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	1123 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	18 ft	Total Volume Pumped:	4.0 gallons		
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	-	-	-	-	-	-	-	-
360	6.38	279.3	2843.5	3.57	7.99	69.8	14.46	250
540	6.31	305.6	2830.5	3.33	8.49	33.6	14.46	250
720	6.27	322.4	2883.1	3.18	8.71	26.3	14.46	250
900	6.22	334.6	3060.3	3.12	8.75	24.3	14.46	250
1080	6.38	344.5	3421.4	2.88	8.71	17	14.46	250
1260	6.35	349.6	3601.5	2.75	8.66	14.1	14.46	250
1440	6.34	353.3	3719.4	2.7	8.61	11	14.46	250
1620	6.32	357.6	3745.4	2.61	8.65	8.57	14.46	250
1800	6.32	362	3851.4	2.54	8.7	8.03	14.46	250
1980	6.31	365.6	3797.4	2.53	8.65	6.33	14.46	250
2160	6.31	367.2	3816.5	2.52	8.43	5.8	14.46	250
2340	6.31	369.4	3851.4	2.51	8.4	5.75	14.46	250
2520	6.29	373.5	4010.7	2.46	8.61	4.8	14.46	250

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	L.Hopp	Well ID:	MW-206		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	20.98 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	14.46 ft	Start Time:	1035 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	1123 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	18 ft	Total Volume Pumped:	4.0 gallons		
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
2700	6.3	373.9	3937.4	2.43	8.47	4.72	14.46	250
2880	6.3	374.8	3887.6	2.4	8.62	4.28	14.46	250
3060	6.3	380.9	3874.5	2.37	8.62	4.1	14.46	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40mL V	1123	N	MW-206
EPH-10	N	HCL	2	1 L A	1123	N	MW-206

Notes: Purged the first 3 minutes, Water measures are from top of PVC.

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH		
Operator Name:	L.Hopp	Well ID:	MW-408		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 2	
Project Name:	140143.0000.4903	Well Total Depth:	25.48 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.6 ft	Start Time:	1328 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	1448 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	19.5 ft	Total Volume Pumped:	8.0 gallons		
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.7	508.7	7535.8	0.26	12.51	17.6	13.61	250
360	6.64	513.6	7780.3	0.48	12.2	16.4	13.61	250
540	6.66	513.8	7753.9	0.63	12.16	16.4	13.61	250
720	6.66	513.8	7757.1	0.66	12.1	11.7	13.61	250
900	6.59	514.7	9277.2	0.63	12.05	10.8	13.61	250
1080	6.62	511.4	8613.8	0.69	12.07	8.4	13.61	250
1260	6.62	503.8	8534.6	0.68	12.04	6.61	13.62	250
1440	6.62	498.3	8472.4	0.69	12.11	5.37	13.62	250
1620	6.63	504.4	8301.2	0.63	12.14	4.27	13.62	250
1800	6.61	504.4	9103.6	0.58	12.16	404	13.62	250
1980	6.59	503.5	8974.7	0.5	12.12	3.92	13.62	250
2160	6.59	504.2	9255.8	0.46	12.07	4.1	13.62	250
2340	6.61	499	8884.3	0.43	12.07	4.37	13.62	250
2520	6.62	494.7	8576.8	0.37	12.07	4	13.62	250

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH			
Operator Name:	L.Hopp	Well ID:	MW-408			
Company Name:	TRC	Well diameter:	2 in. PVC	Page 2 of 2		
Project Name:	140143.0000.4903	Well Total Depth:	25.48 ft			
Site Name:	Weymouth C/S	Screen Length:	15 ft			
Tubing Type:	LDPE	Depth to Water:	13.6 ft	Start Time:	1328 hrs	
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	1448 hrs	
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec			
Pump in take:	19.5 ft	Total Volume Pumped:	8.0 gallons			
Sonde SN:	358206					

Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping
2700	6.62	561	8691.4	0.34	11.99	4.13	13.62	250
2880	6.61	566.7	8563.2	0.32	11.86	4.22	13.62	250
3060	6.61	535.3	8490.2	0.3	11.93	3.61	13.62	250
3240	6.62	523.4	8657.8	0.28	11.93	3.3	13.62	250
3420	6.59	513	9270.2	0.26	11.93	2.3	13.62	250
3600	6.59	506.7	9222	0.25	11.93	2.2	13.62	250
3780	6.59	496.4	9336.3	0.24	11.84	2.34	13.62	250
3960	6.57	484.5	9587.5	0.24	11.88	2.42	13.62	250
4140	6.59	483.2	9420.8	0.24	11.85	2.12	13.62	250
4320	6.58	503.7	9630.6	0.24	11.84	2.0	13.62	250
4500	6.48	512.9	12595.5	0.21	11.84	4.25	13.62	250
4680	6.47	493.8	13034.8	0.2	11.79	4.82	13.62	250
4860	6.5	544.6	12000.8	0.2	11.79	4.0	13.62	250
5040	6.51	597.3	11765.2	0.21	11.75	3.75	13.62	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40mL V	1448	N	MW-408
EPH-10	N	HCL	2	1 L A	1448	N	MW-408

Notes: Water measures are from top of PVC.

Low-Flow System Sampling

Date:	3/22/2017	Turbidity Make/Model:	HACH		
Operator Name:	L.Hopp	Well ID:	MW-409		
Company Name:	TRC	Well diameter:	2 in. PVC	Page 1 of 1	
Project Name:	140143.0000.4903	Well Total Depth:	25.10 ft		
Site Name:	Weymouth C/S	Screen Length:	15 ft		
Tubing Type:	LDPE	Depth to Water:	13.4 ft	Start Time:	0905 hrs
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min	Sample Collected:	0935 hrs
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec		
Pump in take:	19 ft	Total Volume Pumped:	3.3 gallons		
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	-	-	-	-	-	-	-	-
360	5.75	274.9	27211.3	0.24	10.54	3.69	13.4	250
540	5.84	267.7	24077.2	0.19	10.75	3.63	13.4	250
720	5.83	269.9	24312.9	0.15	10.88	1.05	13.4	250
900	5.83	274.9	24074.3	0.14	11	2.39	13.4	250
1080	5.83	286.3	24282.2	0.13	11.06	3.05	13.4	250
1260	5.83	301.1	24287.3	0.12	11.2	0.74	13.4	250
1440	5.83	320.2	24512.9	0.11	11.2	0.92	13.4	250
1620	5.84	337.6	24231	0.11	11.1	1	13.4	250
1800	5.84	346	24509.4	0.11	10.95	0.64	13.4	250
1980	5.84	347.6	24552.7	0.1	10.9	0.44	13.4	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40mL V	935	N	MW-409
EPH-10	N	HCL	2	1 L A	935	N	MW-409

Notes: Wind and snow, flow thru- in shade. Purged first 3 minutes. Water measures are from top of PVC.

Low-Flow System Sampling

Date:	3/21/2017	Turbidity Make/Model:	HACH	Page 1 of 1	
Operator Name:	L.Hopp	Well ID:	MW-410		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	25.29 ft	Depth to Product:	13.11 ft
Site Name:	Weymouth C/S	Screen Length:	15 ft	Product Thickness:	0.25
Tubing Type:	LDPE	Depth to Water:	13.36 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min		
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec	Start Time:	1118 hrs
Pump in take:	19 ft	Total Volume Pumped:	1.7 gallons	Sample Collected:	1136 hrs
Sonde SN:	358206				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature C	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	6.48	512.3	24907	0.13	13.06	2.64	13.36	250
360	6.53	539.4	25811.2	0.12	12.4	2.71	13.36	250
540	6.56	554.6	26370.7	0.12	12.25	2.52	13.36	250
720	6.56	566.9	26650.8	0.11	12.21	1.37	13.36	250
900	6.57	570.5	27096.9	0.11	12.12	1.88	13.36	250
1080	6.57	569.2	27428.8	0.11	12.09	1.55	13.36	250
1260	6.57	566.5	27716.3	0.11	12.11	1.22	13.36	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	3 40mL V	1136	N	MW-410
EPH-10	N	HCL	2	1 L A	1136	N	MW-410

Notes: Purged approximately 3 gallons of water from the well before starting water quality measurements. Odor and sheen visible. DTW could not be measured during stabilization readings due to the thick viscous LNAPL observed in the well.

Low-Flow System Sampling

Date:	3/23/2017	Turbidity Make/Model:	HACH	Page 1 of 1	
Operator Name:	L.Hopp	Well ID:	MW-415		
Company Name:	TRC	Well diameter:	2 in. PVC		
Project Name:	140143.0000.4903	Well Total Depth:	23 ft	Depth to Product:	14.92 ft
Site Name:	Weymouth C/S	Screen Length:	15 ft	Product Thickness:	0.1
Tubing Type:	LDPE	Depth to Water:	15.02 ft		
Tubing Diameter:	.170 x 1/4 in	Final Pumping Rate:	250 mL/min		
Pump Model/Type:	Geopump Peristaltic	Calculated Sample Rate:	180 sec	Start Time:	1213 hrs
Pump in take:	19 ft	Total Volume Pumped:	2.2 gallons	Sample Collected:	1240 hrs
Sonde SN:	387325				

Low Flow Stabilzation Summary

Time (sec)	pH	ORP (mV)	Conductivity (µS/cm)	DO (mg/L)	Temperature (C)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)
180	-	-	-	-	-	-	-	-
360	6.14	69	15828.3	0.08	11.2	19.8	15.46	250
540	5.91	68.9	29570.4	0.12	10.92	6.29	15.46	250
720	5.99	61.5	32666.6	0.05	11.18	1.98	15.46	250
900	6.02	57.3	33199.8	0.03	11	1.17	15.46	250
1080	6.04	55.6	33301.7	0.02	10.93	1.21	15.46	250
1260	6.04	55	33473.1	0.02	10.84	1.08	15.46	250
1440	6.05	55.6	33711.9	0.01	11.33	0.06	15.46	250
1620	6.05	58.2	33727	0.01	11.4	0.92	15.46	250
1800	6.05	61.9	33457.9	0	11.13	1.06	15.46	250

Analytical Parameter	Filtered (Y/N)	Preserva-tive	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH-10	N	HCL	3	40mL V	1240	N	MW-415
EPH-10	N	HCL	2	1L A	1240	N	MW-415

Notes: Residual product on inside of well, purged 2 gallons and first 3 minutes, no sheen. Water measures are from top of PVC.

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Weymouth Spectra Energy	140143	6/7/17 0530	1 of 1

TRC Personnel: B Ayres

Well ID: MW-201

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch

Other:

WELL MATERIAL: ✓ PVC; SS

Other:

Well Depth ____ ft. ✓ top of riser; top of casing; ____ ✓ measured; historical (BA)

Water Depth 13.05 ft.

Well Volume ____

LNAPL/DNAPL Depth = ~~0.97~~ 12.97

NAPL Thickness = ~~0.1~~ 0.8

Depth of pump intake: 14'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes) ✓

Flow rate at time of sampling: 230

Total volume of water purged: 4 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0530	0835	0840	0845	0850	0855	0900	0905	0910
Temp. (°C)	Start	12.1	12.1	12.0	11.9	11.8	11.8	11.8	11.8
Conduct. (µmhos/cm)	Purge	26061	22101	26031	26059	26051	26094	26019	26070
DO (mg/L)		~~26~~ 1.41	1.61	1.41	1.30	1.19	0.85	0.31	0.27
pH (su)		6.34	6.33	6.31	6.31	6.24	6.29	6.30	6.32
ORP (millivolts)		10.6	5.3	0.21	-9.5	-9.5	-11.1	-15.7	-16.6
Turbidity (NTU)		10.3	2.66	1.74	1.91	0.95	0.71	0.62	0.54
Flow (ml/min)	230	→	→	→	→	→	→	→	→
Depth To Water (ft)	13.05	13.07	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	0915	0920	0925	0930
Temp. (°C)	11.8	11.9	11.9	11.9
Conduct. (µmhos/cm)	25942	26089	26002	26034
DO (mg/L)	0.01	0.00	0.00	0.00
pH (Std. Units)	6.43	6.36	6.37	6.38
Eh/ORP (millivolts)	-23.0	-25.6	-28.6	-32.2
Turbidity (NTU)	0.47	0.41	0.39	0.27
Flow (ml/min)	230	→	→	→
Depth To Water (ft)	13.07	→	→	→
Cumulative Purge Vol. (gal or L)				

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: heavy sheen in bucket, small globs of LNAPL product, water clear, petro odor

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Am gl	0930		MW-201
VPH	↓	↓	3	40mL VOA	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: B Ayres

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth		6/5/17 0840	1 of 1

TRC Personnel: Annie Cornell

Well ID: MW-202

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: smart troll, hach

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other:

WELL MATERIAL: [X] PVC [ ] SS

Other:

Well Depth ____ ft. [✓] top of riser [ ] top of casing [ ] [ ] measured [✓] historical

Water Depth 12.62 ft.

Well Volume ____

LNAPL/DNAPL Depth = 0

NAPL Thickness = —

Depth of pump intake: ISFE

Static water level after pump put into well: 12.65

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 5 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	842	847	852	857	902	907	912	915	S
Temp. (°C)	12.04	12.04	12.01	11.96	11.95	11.94	11.87	11.91	A
Conduct. (µmhos/cm)	31004	31040	31133	31134	31159	31207	31281	31281	M
DO (mg/L)	0.10	0.08	0.06	0.06	0.05	0.05	0.05	0.04	P
pH (su)	~~6.45~~ ~~6.50~~	6.47	6.48	6.49	6.49	6.49	6.49	6.49	L
ORP (millivolts)	-49.10	-46.9	-45.0	-43.0	-41.8	-39.8	-38.80	-37.7	E
Turbidity (NTU)	10.3	5.32	9.78	4.64	3.65	5.92	3.25	3.27	
Flow (ml/min)	300	300	300	300	300	300	300	300	
Depth To Water (ft)	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	
Cumulative Purge Vol. (gal or L)									

Time							Stabilization Criteria* (3 consecutive readings)
Temp. (°C)							- Temperature: ± 3 %
Conduct. (µmhos/cm)							- Conduct. (µmhos/cm): ± 3 %
DO (mg/L)							- DO (mg/L): ± 10 % (for values >0.5 mg/L)
pH (Std. Units)							- pH (Std. Units): ± 0.1 SU
Eh/ORP (millivolts)							- ORP (millivolts): ± 10 mV
Turbidity (NTU)							- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
Flow (ml/min)							- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	915		MW-202
VPH	N	HCL	3	VIALS	915		

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Annie Cornell

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Energy	104116 (140148)	6/5/17 0900	1 of 7

TRC Personnel: B Ayres

Well ID: MW-203

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch; Other:

WELL MATERIAL: ✓ PVC; SS; Other:

Well Depth ____ ft. ✓ top of riser; top of casing; ✓ measured; historical

Water Depth 13.15 ft. Well Volume ____

LNAPL/DNAPL Depth = N/A

NAPL Thickness = N/A

Depth of pump intake: 191

Static water level after pump put into well: 13.20'

Initial purge Rate/ Water Level (100-400 ml/min): 200

Adjusted purge Rates/time/WL(record changes): 240

Flow rate at time of sampling: 240

Total volume of water purged: 4 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0900	0905	0910	0915	0920	0925	0930	0935	0940
Temp. (°C)	Start	13.22	12.56	12.41	12.35	12.35	12.35	12.34	12.35
Conduct. (µmhos/cm)	Purge	34258	35355	35417.8	35467	35480	35482.6	35489.6	35365.4
DO (mg/L)	↓	0.24	0.14	0.12	6.11	0.10	0.10	6.16	6.10
pH (su)		6.18	6.28	6.31	6.33	6.33	6.34	6.34	6.34
ORP (millivolts)		37.5	~~23.3~~	20.2	19.1	19.1	19.1	19.8	20.4
Turbidity (NTU)	↓	OOR	41.9	32.7	26.4	23.4	23.9	21.5	16.6
Flow (ml/min)	200	240	→	→	→	→	→	→	→
Depth To Water (ft)	13.15	13.17	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	0945	0950	0955
Temp. (°C)	12.35	12.34	12.37
Conduct. (µmhos/cm)	35359.4	35334	35380.7
DO (mg/L)	0.09	0.10	0.10
pH (Std. Units)	6.34	6.34	6.34
Eh/ORP (millivolts)	20.5	21.1	21.0
Turbidity (NTU)	13.9	15.1	14.2
Flow (ml/min)	240	→	→
Depth To Water (ft)	13.17	→	→
Cumulative Purge Vol. (gal or L)			

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Cloudy, N/O, N/S → Clear, N/O, N/S
Orange flakes noted in sample jars, was not present during purge

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	1L Agl			MW-203
EPH	↓	~~AS-DS~~	2	40mL Vial	↓		↓
		(A) HCl					

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Energy Weymouth
Project No.: 140143 ~~164164~~ (BA)
Date/Time: 6/5/17 1015
Sheet 1 **of** 1
TRC Personnel: B Ayres
Well ID: MW-204

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic Pump
Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.
Riser Stick-up (from ground): 2 ft.

WELL DIAMETER ☑ 2 inch ☐ 4 inch ☐ 6 inch
Other: ______

WELL MATERIAL ☑ PVC ☐ SS
Other: ______

Well Depth ______ ft. ☑ top of riser ☐ top of casing ☐ ______ ☐ measured ☑ historical

Water Depth 13.82 ft.
Well Volume ______
LNAPL/DNAPL Depth = N/A
NAPL Thickness = N/A
Depth of pump intake: 19'
Static water level after pump put into well: 13.85
Initial purge Rate/ Water Level (100-400 ml/min): 230
Adjusted purge Rates/time/WL(record changes):
Flow rate at time of sampling: 230
Total volume of water purged: 2 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1015	1020	1025	1030	1035	1040	1045	1050	
Temp. (°C)	Start	12.21	11.82	11.77	11.65	11.61	11.64	11.61	
Conduct. (µmhos/cm)	Purge	30104.3	32885.9	32215.5	32282.0	32299.3	32442.4	32742.6	
DO (mg/L)	↓	0.55	0.16	0.14	0.12	0.11	0.10	0.09	
pH (su)	↓	6.75	6.59	6.56	6.55	6.55	6.54	6.54	
ORP (millivolts)	↓	76.3	71.9	72.1	68.6	69.5	73.4	70.4	
Turbidity (NTU)	↓	OOR	12.2	9.21	7.39	5.87	1.59	0.64	
Flow (ml/min)	230	→	→	→	→	→	→	→	
Depth To Water (ft)	13.82	→	→	→	→	→	→	→	
Cumulative Purge Vol. (gal or L)									

Time						
Temp. (°C)						
Conduct. (µmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Cloudy, Nro, NIS → Clear, Nro, NS. Orange flakes noted in Sample Jars, not present during purge

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L G1 Am	1050		MW-204
VPH	↓	↓	3	40mL Vial	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spetra Weymouth		4/5/17 1110	

TRC Personnel: Annie Cornell

Well ID: MW-205

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: smart troll, hach

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	-
Well Mouth	-

Protective Casing Stick-up (from ground) _____ ft.

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [X] PVC [ ] SS

Other: _____

Well Depth _____ ft. [✓] top of riser [ ] top of casing [ ] _____ [ ] measured [✓] historical

Water Depth 14.64 ft.

Well Volume _____

LNAPL/DNAPL Depth = -

NAPL Thickness = -

Depth of pump intake: 18 ft

Static water level after pump put into well: 14.66

Initial purge Rate/ Water Level (100-400 ml/min): 360

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 3 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1040	1045	1050	1055	1100	1105	1110		
Temp. (°C)	12.28	11.53	11.45	11.41	11.45	11.41	11.36		
Conduct. (µmhos/cm)	27514	25353	24919	23960	23857	23639	23621		
DO (mg/L)	6.70	0.14	0.09	0.06	0.06	0.05	0.05		
pH (su)	6.84	6.95	6.96	6.99	6.99	6.98	6.99		
ORP (millivolts)	-30.8	-39.5	-45.8	-43.2	-42.5	-42.1	-41.4		
~~Turbidity (NTU)~~ Flow	300	300	300	300	300	300	300		
~~Flow (ml/min)~~ turbidity	3.78	3.04	3.17	3.45	2.55	4.35	2.45		
Depth To Water (ft)	14.66	14.65	14.65	14.64	14.64	14.62	14.62		
Cumulative Purge Vol. (gal or L)									

Time							
Temp. (°C)							
Conduct. (µmhos/cm)							
DO (mg/L)							
pH (Std. Units)							
Eh/ORP (millivolts)							
Turbidity (NTU)							
Flow (ml/min)							
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	1110		MW-205
VPH	N	HCL	3	vials	1110		

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Annie Cornell

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Weymouth Spectra Energy | Project No.: ~~104461~~ 140143 | Date/Time: 0900 6/6/17 | Sheet 1 of 1

TRC Personnel: B Ayres | Well ID: MW-206

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER ☑ 2 inch ☐ 4 inch ☐ 6 inch Other: ______

WELL MATERIAL ☑ PVC ☐ SS Other: ______

Well Depth ______ ft. ☑ top of riser ☐ top of casing ☐ ______ ☐ measured ☑ historical

Water Depth 14.17 ft.

Well Volume______

LNAPL/DNAPL Depth = N/A

NAPL Thickness = N/A

Depth of pump intake: 19'

Static water level after pump put into well: 14.17

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 230

Total volume of water purged: 3.5 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0900	0905	0910	0915	0920	0925	0930	0935	0940
Temp. (°C)	Start	10.21	11.00	11.03	11.05	11.10	11.10	11.09	11.05
Conduct. (µmhos/cm)	purge	3500.6	3510.1	3539.1	3548.6	3576.8	3586.4	3587.5	3591.2
DO (mg/L)		1.67	1.51	1.47	1.43	1.39	1.39	1.37	1.37
pH (su)		7.91	7.81	7.73	7.45	7.33	7.28	7.21	7.19
ORP (millivolts)		143.6	137.6	122.9	113.6	79.2	76.4	71.0	69.5
Turbidity (NTU)		OOR	OOR	64.3	58.6	37.6	19.1	24.5	18.9
Flow (ml/min)	230	→							→
Depth To Water (ft)	14.17	14.19	→						→
Cumulative Purge Vol. (gal or L)									

Time	0945	0950	0955			
Temp. (°C)	11.05	11.06	11.07			
Conduct. (µmhos/cm)	3588.8	3592.6	3602.5			
DO (mg/L)	1.37	1.36	1.35			
pH (Std. Units)	7.17	7.14	7.13			
Eh/ORP (millivolts)	70.6	67.4	67.1			
Turbidity (NTU)	9.04	8.32	7.61			
Flow (ml/min)	230	→				
Depth To Water (ft)	14.19	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Mini @ 11', bolt used to keep tubing down
Clear, Slight Sheen in bucket, no odor

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Agl	0955		MW-206
VPH	↓	↓	3	40mL Vial	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spetra Weymouth		6/5/17	

TRC Personnel: Annie Cornell

Well ID: MW-400

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	Y	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	Y	

Sampling Equipment: SMART Troll, MACH

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	5
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: ____

WELL MATERIAL: [X] PVC [ ] SS — Other: ____

Well Depth ____ ft. [✓] top of riser [ ] top of casing — [ ] measured [/] historical

Water Depth 11.97 ft. — Well Volume ____ — LNAPL/DNAPL Depth = — — NAPL Thickness = —

Depth of pump intake: 15ft

Static water level after pump put into well: 12.94

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 3 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	945	950	955	1000	1005	1010	1015		
Temp. (°C)	12.58	12.28	12.28	12.28	12.26	12.24	12.24		
Conduct. (µmhos/cm)	37478	37516	37522	37485	37435	37415	37420		
DO (mg/L)	0.32	0.09	0.06	0.06	0.05	0.05	0.05		
pH (su)	6.55	6.49	6.46	6.45	6.44	6.44	6.43		
ORP (millivolts)	7.5	3.0	2.0	1.5	0.1	-1.4	-1.9		
Turbidity (NTU)	53.9	4.39	2.32	2.43	1.32	0.63	1.36		
Flow (ml/min)	300	300	300	300	300	300	300		
Depth To Water (ft)	12.94	12.92	12.91	12.91	12.91	12.89	12.89		
Cumulative Purge Vol. (gal or L)									

Time							
Temp. (°C)							
Conduct. (µmhos/cm)							
DO (mg/L)							
pH (Std. Units)							
Eh/ORP (millivolts)							
Turbidity (NTU)							
Flow (ml/min)							
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, NIO, NIS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	1015		MW-400
VPH	N	HCL	3	VIAL	1015		

* Consult the applicable regulatory guidance for the specific criteria.

Signed: Annie Cornell

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 2
Spectra Weymouth		6/5/17 1155	

TRC Personnel: Annie Cornell

Well ID: MW-401

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: smart troll, HACH

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: ____

WELL MATERIAL: [X] PVC [ ] SS — Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ — [ ] measured [X] historical

Water Depth 13.87 ft. — LNAPL/DNAPL Depth = —

Well Volume ____ — NAPL Thickness = ____

Depth of pump intake: ____

Static water level after pump put into well: 13.89

Initial purge Rate/ Water Level (100-400 ml/min): ~~300~~ 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 2.5 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1155	1200	1205	1210	1215	1220	1225	1230	
Temp. (°C)	12.09	11.55	11.33	11.31	11.30	11.27	11.27	11.27	
Conduct. (µmhos/cm)	41234	41614	41325	41119	40961	40808	40645	40005	
DO (mg/L)	0.22	0.12	0.07	0.07	0.05	0.05	0.04	0.04	
pH (su)	7.15	7.22	7.27	7.27	7.26	7.26	7.26	7.26	
ORP (millivolts)	-39.3	-45.2	-43.4	-42.1	-42.0	-41.1	-42.0	-41.0	
Turbidity (NTU)	10.9	4.61	6.70	6.59	6.49	4.72	2.40	2.73	
Flow (ml/min)	300	300	300	300	300	300	300	300	
Depth To Water (ft)	13.87	13.88	13.88	13.87	13.87	13.86	13.86	13.86	
Cumulative Purge Vol. (gal or L)									

Time							
Temp. (°C)							
Conduct. (µmhos/cm)							
DO (mg/L)							
pH (Std. Units)							
Eh/ORP (millivolts)							
Turbidity (NTU)							
Flow (ml/min)							
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	1230		MW-401
VPH	N	HCL	3	VIALS	1230		

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Annie Cornell

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Energy Weymouth	Project No.: ~~164461~~ 14014 (BA)	Date/Time: 6/5/17 1335	Sheet 1 of 1
TRC Personnel: B Ayres		Well ID: MW-402	

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [✓] 2 inch [ ] 4 inch [ ] 6 inch Other: ______

WELL MATERIAL: [✓] PVC [ ] SS Other: ______

Well Depth ______ ft. [✓] top of riser [ ] top of casing [ ] ______ [ ] measured [✓] historical

Water Depth 14.75 ft.

Well Volume ______

LNAPL/DNAPL Depth = NA

NAPL Thickness = NA

Depth of pump intake: 19'

Static water level after pump put into well: 14.75

Initial purge Rate/ Water Level (100-400 ml/min): 240

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 240

Total volume of water purged: 2.5 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1335	1340	1345	1350	1355	1400	1405	1410	1415
Temp. (°C)	Start	10.49	10.31	10.30	10.26	10.24	10.26	10.21	10.20
Conduct. (µmhos/cm)	Purge	341930	337863	330023	324152	320988	314341	304740	305370
DO (mg/L)	↓	0.35	0.32	0.33	0.33	0.35	0.37	0.38	0.42
pH (su)	↓	6.82	6.78	6.75	6.75	6.75	6.75	6.75	6.76
ORP (millivolts)	↓	69.1	63.2	61.2	60.2	59.8	60.0	58.5	57.9
Turbidity (NTU)	↓	27.1	4.71	1.94	1.32	0.97	1.20	0.71	1.48
Flow (ml/min)	240	→	→	→	→	→	→	→	→
Depth To Water (ft)	14.75	→	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time						
Temp. (°C)						
Conduct. (µmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* **(3 consecutive readings)**
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amber	1415		MW-402
VPH	↓	↓	3	40mL Vial	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC **Groundwater Field Data Record**	Project: Spectra Weymouth Energy	Project No.: 140143 ~~1411LT~~	Date/Time: 6/5/17 1150	Sheet 1 of 1
	TRC Personnel: B Ayres		Well ID: MW-403	

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [✓] 2 inch [ ] 4 inch [ ] 6 inch Other: ______

WELL MATERIAL: [✓] PVC [ ] SS Other: ______

Well Depth ______ ft. [✓] top of riser [ ] top of casing [ ] ______ [ ] measured [✓] historical

Water Depth 13.01 ft. LNAPL/DNAPL Depth = N/A

Well Volume ______ NAPL Thickness = N/A

Depth of pump intake: 19'

Static water level after pump put into well: 13.05

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes): ~~230~~ 230

Flow rate at time of sampling: 230

Total volume of water purged: 4 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1150	1155	1200	1205	1210	1215	1220	1225	1230
Temp. (°C)	Start	11.32	12.07	12.24	12.36	12.89	11.56	11.27	11.22
Conduct. (μmhos/cm)	purge	37931.3	37941.4	37962.1	37995.4	37982.7	37618	37913.0	37879.3
DO (mg/L)	↓	3.08	3.09	3.17	3.29	3.32	3.19	3.10	3.04
pH (su)	↓	6.86	6.80	6.70	6.66	6.66	6.65	6.66	6.66
ORP (millivolts)	↓	93.5	91.7	96.3	86.2	85.7	86.1	85.0	85.0
Turbidity (NTU)	↓	18.7	11.2	6.71	3.21	0.49	0.61	0.71	0.32
Flow (ml/min)	230	→	→	→	→	→	→	→	→
Depth To Water (ft)	13.01	13.03	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1235	1240	1245	1250	1255	1300
Temp. (°C)	11.17	11.08	11.02	10.91	10.85	10.81
Conduct. (μmhos/cm)	37412.6	37312.9	36749.0	36169.0	35829.0	35153.4
DO (mg/L)	2.81	2.63	2.29	1.98	1.67	1.60
pH (Std. Units)	6.66	6.65	6.64	6.63	6.62	6.61
Eh/ORP (millivolts)	85.2	85.5	85.5	84.4	83.9	83.6
Turbidity (NTU)	0.31	0.17	1.01	0.67	0.43	0.37
Flow (ml/min)	230	→	→	→	→	→
Depth To Water (ft)	13.03	→	→	→	→	→
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* **(3 consecutive readings)**
- Temperature: ± 3 %
- Conduct. (μmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amber	1300		MW-403
VPH	↓	↓	3	40mL	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth		6/6/17 0840	1 of

TRC Personnel: Annie Cornell

Well ID: MW-404

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: smart troll, mach

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: ☐ 2 inch ☒ 4 inch ☐ 6 inch — Other: ____

WELL MATERIAL: ☒ PVC ☐ SS — Other: ____

Well Depth ____ ft. ☑ top of riser ☐ top of casing ☐ measured ☑ historical

Water Depth 12.70 ft.

Well Volume ____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: 17

Static water level after pump put into well: 12.71

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 6 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0840	0845	0850	0855	0900	0905	0910	0915	0920
Temp. (°C)	16.95	10.80	10.76	10.74	10.74	10.73	10.71	10.70	10.69
Conduct. (µmhos/cm)	37347	37528	37572	37468	37456	37230	37255	37232	36971
DO (mg/L)	0.12	0.08	.05	.02	.00	.00	.00	0.00	0.00
pH (su)	5.99	6.22	6.41	6.51	6.47	6.50	6.52	6.52	6.53
ORP (millivolts)	42.6	46.8	39.9	37.8	36.9	35.7	36.1	34.0	33.3
Turbidity (NTU)	70.1	43.8	33.8	56.8	41.8	66.7	67.9	47.7	49.1
Flow (ml/min)	300	300	300	300	300	300	300	300	300
Depth To Water (ft)	12.71	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
Cumulative Purge Vol. (gal or L)									

Time	0925	0930	0935	0940	0945	0950
Temp. (°C)	10.67	10.67	10.66	10.66	10.67	10.66
Conduct. (µmhos/cm)	37104	37011	36919	36822	36743	36590
DO (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00
pH (Std. Units)	6.53	6.53	6.52	6.51	6.51	6.50
Eh/ORP (millivolts)	34.9	33.7	33.3	32.7	32.9	29.1
Turbidity (NTU)	10.9	12.5	18.2	13.5	16.3	18.7
Flow (ml/min)	300	300	300	300	300	300
Depth To Water (ft)	12.70	12.70	12.70	12.70	12.70	12.70
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

0955 - samp
10.66
36953
0.00
6.50
28.2
18.7
300
12.70

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, NRO, NIS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250 A	955		MW-404
VPH	N	HCL	3	VOA	955		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth		6/6/17 1025	1 of 1

TRC Personnel: Annie Cornell

Well ID: MW-405

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: SMALL TROLL, MACH

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	~
Well Mouth	~

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up _____ ft. (from ground)

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: _____

WELL MATERIAL: [X] PVC [ ] SS — Other: _____

Well Depth _____ ft. [/] top of riser [ ] top of casing [ ] _____ — [ ] measured [/] historical

Water Depth 14.15 ft. — **Well Volume** _____ — **LNAPL/DNAPL Depth =** _____ — **NAPL Thickness =** _____

Depth of pump intake: 17

Static water level after pump put into well: 14.15

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes)

300

Flow rate at time of sampling: 300

Total volume of water purged: 3 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1025	1030	1035	1040	1045	1050			
Temp. (°C)	12.51	12.72	12.74	12.76	12.82	12.86			
Conduct. (µmhos/cm)	27358	33737	32922	33785	34396	34713			
DO (mg/L)	0.14	0.06	0.04	0.02	0.01	0.01			
pH (su)	6.48	6.32	6.33	6.32	6.30	6.30			
ORP (millivolts)	83.1	84.7	81.5	82.3	82.3	78.9			
Turbidity (NTU)	11.3	2.8	2.12	1.41	3.14	1.22			
Flow (ml/min)	300	300	300	300	300	300			
Depth To Water (ft)	14.15	14.15	14.15	14.15	14.14	14.14			
Cumulative Purge Vol. (gal or L)									

Time						
Temp. (°C)						
Conduct. (µmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	1050		MW-405
VPH	N	HCL	3	VIALS	1050		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: _____

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth		6/7/17	

TRC Personnel: Annie Cornell

Well ID: MW-406 / DUP-2

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Smart roll, Hach

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	~

Protective Casing Stick-up 2 ft. (from ground)

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: ____

WELL MATERIAL

[X] PVC [ ] SS — Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing — [ ] measured [X] historical

Water Depth 13.39 ft. — Well Volume ____

LNAPL/DNAPL Depth = 13.39 — NAPL Thickness = minimal (globs)

Depth of pump intake: 15 ft

Static water level after pump put into well: 13.39

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 5 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	845	850	855	900	905	910	915	920	925
Temp. (°C)	12.47	12.47	12.55	12.61	12.67	12.73	12.74	12.77	12.79
Conduct. (µmhos/cm)	5953	13976	23345	28593	30537	31610	32082	32331	32451
DO (mg/L)	0.08	0.06	0.04	0.02	0.01	0.00	0.00	0.00	0.00
pH (su)	6.02	6.06	6.16	6.26	6.31	6.34	6.34	6.34	6.34
ORP (millivolts)	-31.4	-36.1	-23.7	-23.3	-24.0	-28.0	-28.6	-30.1	-32.6
Turbidity (NTU)	27.9	33.8	32.6	100	68.9	42.3	32.7	19.2	13.41
Flow (ml/min)	300	300	300	300	300	300	300	300	300
Depth To Water (ft)									
Cumulative Purge Vol. (gal or L)									

Time	930	935	938	941	945	
Temp. (°C)	12.83	12.88	12.88	12.92	S	
Conduct. (µmhos/cm)	32541	32657	32710	32707	A	
DO (mg/L)	0.00	0.00	0.00	0.00	M	
pH (Std. Units)	6.33	6.32	6.31	6.31	P	
Eh/ORP (millivolts)	-35.7	-46.0	-41.9	-43.6	L	
Turbidity (NTU)	7.52	5.49	5.23	4.67	E	
Flow (ml/min)	300	300	300	300		
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: depth to water not taken due to NAPL in the well

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	945		MW-406 / DUP-2
VPH	N	HCL	3	VIALS	945		

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth		6/7/17	

TRC Personnel: Annie Carrell

Well ID: MW-407

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: SMART TROLL, MACRO

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	~

Protective Casing Stick-up 2 ft. (from ground)

Riser Stick-up 2 ft. (from ground)

WELL DIAMETER: X 2 inch; 4 inch; 6 inch

Other: ____

WELL MATERIAL: X PVC; SS

Other: ____

Well Depth ____ ft. — top of riser; top of casing; measured; X historical

Water Depth 13.16 ft.

Well Volume ____

LNAPL/DNAPL Depth = minimal ~13.13

NAPL Thickness = ____

Depth of pump intake: 18 ft.

Static water level after pump put into well: 13.13

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 3 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1025	1030	1035	1040	1045	1050			
Temp. (°C)	13.11	12.66	12.73	12.74	12.69	12.65			
Conduct. (µmhos/cm)	4003	5574	5768	5749	5765	5840			
DO (mg/L)	0.12	0.06	0.04	0.03	0.02	0.02			
pH (su)	6.72	6.65	6.62	6.62	6.61	6.60			
ORP (millivolts)	-123.9	-128.1	-128.0	-127.4	-127.0	-126.5			
Turbidity (NTU)	8.93	6.51	7.74	7.71	7.84	7.91			
Flow (ml/min)	300	300	300	300	300	300			
Depth To Water (ft)	13.13	13.14	13.14	13.14	13.14	13.13			
Cumulative Purge Vol. (gal or L)									

Time						
Temp. (°C)						
Conduct. (µmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments: Clear, NIS

Some globulals of NAPL @ ~13.13

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250 A	1050		MW-407
VPH	N	HCL	3	VIALS	1050		

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Weymouth / SkyHawk Energy | Project No.: 104161 | Date/Time: 6/6/17 0905 | Sheet 1 of 1

TRC Personnel: B Ayres | Well ID: MW-408

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch

Other:

WELL MATERIAL: ✓ PVC; SS

Other:

Well Depth ____ ft. ✓ top of riser; top of casing; ____ ✓ measured; historical

Water Depth 13.15 ft.

Well Volume

LNAPL/DNAPL Depth = N/A

NAPL Thickness = N/A

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 230

Total volume of water purged: 2.5 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0905	0910	0915	1200	1225	1230	1235	1240	1245
Temp. (°C)	Start	11.56	11.41	11.10	11.07	11.04	11.03	11.00	11.01
Conduct. (µmhos/cm)	Purge	3372.8	4169.0	4787	4785	4765	4826	4868	4768
DO (mg/L)		3.69	3.21	2.55	2.51	2.48	2.30	2.19	2.18
pH (su)		7.25	7.10	6.97	6.96	6.95	6.93	6.92	6.93
ORP (millivolts)		57.7	46.2	35.3	32.6	30.9	27.6	24.6	23.1
Turbidity (NTU)		6.91	2.47	1.97	1.76	1.50	1.27	0.85	0.76
Flow (ml/min)	230								
Depth To Water (ft)	13.15								
Cumulative Purge Vol. (gal or L)									

Time							
Temp. (°C)							
Conduct. (µmhos/cm)							
DO (mg/L)							
pH (Std. Units)							
Eh/ORP (millivolts)							
Turbidity (NTU)							
Flow (ml/min)							
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clean, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1 L Amb	1245		MW-408
VPH	↓	↓	3	40 mL VOA	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed:

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Weymouth Project No.: Spectra Energy 104161

Date/Time: 6/6/17 1030

Sheet 1 of 1

TRC Personnel: B Ayres

Well ID: MW 409

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch

Other:

WELL MATERIAL: ✓ PVC; SS

Other:

Well Depth ____ ft. ✓ top of riser; top of casing; ____ ✓ measured; historical

Water Depth 12.98 ft. LNAPL/DNAPL Depth = N/A

Well Volume ____ NAPL Thickness = N/A

Depth of pump intake: 18'

Static water level after pump put into well: 13.00

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 230

Total volume of water purged: 3 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1030	1035	1040	1045	1050	1055	1100	1105	1110
Temp. (°C)	Start	10.92	10.85	10.87	10.91	10.88	10.87	10.88	10.88
Conduct. (µmhos/cm)	purge	5600.9	5721.6	5783	5686.0	5560	5412.3	5421.9	5263.1
DO (mg/L)		0.31	0.24	0.19	0.18	0.17	0.16	0.17	0.16
pH (su)		6.99	6.92	6.92	6.91	6.91	6.91	6.91	6.90
ORP (millivolts)		-13.8	-15.4	-16.4	-16.2	-17.3	-16.9	-15.8	-14.2
Turbidity (NTU)				2.04	1.31	0.08	0.91	2.01	1.93
Flow (ml/min)	230	→	→	→	→	→	→	→	→
Depth To Water (ft)	12.98	13.00	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1115	1120	~~1125~~				
Temp. (°C)	10.86	10.87					
Conduct. (µmhos/cm)	5009.6	4981.0					
DO (mg/L)	0.15	0.15					
pH (Std. Units)	6.89	6.89					
Eh/ORP (millivolts)	-13.6	-13.1					
Turbidity (NTU)	2.16	1.97					
Flow (ml/min)	230	230					
Depth To Water (ft)	13.00	13.06					
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, No, No

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1 L Amb	1120		MW-409
VPH	↓	↓	3	40mL Vial	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed:

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Weymouth C/S	140143.0000.4903	6/7/17 0915	1 of 1

TRC Personnel: L. Hopp **Well ID:** MW 410

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Sampling Equipment: ______

Flow-thru Cell Volume: ______

PID SCREENING MEAS.

Background	NM
Well Mouth	NM

Protective Casing Stick-up (from ground) ______ ft.

Riser Stick-up (from ground) ______ ft.

WELL DIAMETER ☒ 2 inch ☐ 4 inch ☐ 6 inch Other: ______

WELL MATERIAL ☒ PVC ☐ SS Other: ______

Well Depth ______ ft. ☑ top of riser ☐ top of casing ☐ ______ ☐ measured ☑ historical

Water Depth 12.65 ft. LNAPL/DNAPL Depth = ND

Well Volume ______ NAPL Thickness = NM

Depth of pump intake: 18'

Static water level after pump put into well: 18'

Initial purge Rate/ Water Level (100-400 ml/min): 400 mL/min

Adjusted purge Rates/time/WL(record changes): 300 mL/min

Flow rate at time of sampling: 300

Total volume of water purged: 1.75

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0915	0920	0925	0930	0935	0940	0945	0950	
Temp. (°C)	P	12.36	12.03	12.05	12.06	12.11	12.14	12.15	
Conduct. (μmhos/cm)		~~30532~~ 40903	~~306xxx~~ 40851	41204	41456	41534	41487	41477	
DO (mg/L)	U	0.75	.77	.70	.57	.55	.54	.54	
pH (su)		6.58	6.66	6.07	6.67	6.68	6.69	6.68	
ORP (millivolts)	R	67.3	66.3	67.7	69.2	70.4	71.9	73.0	
Turbidity (NTU)	G	3.67	3.58	2.05	1.97	1.84	2.06	1.71	
Flow (ml/min)		300	300	300	300	300	300	300	
Depth To Water (ft)	E	18'	18'	18'	18'	18'	18'	18'	
Cumulative Purge Vol. (gal or L)		.25	.50	.75	1.00	1.25	1.50	1.75	

Time						
Temp. (°C)						
Conduct. (μmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (μmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☒	☒
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: ______	☐	☐

Comments:
Started 0900 - purged 2 gallons
Flow Thru Cell in Shade and sun

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH Deluxe	N	HCl	2	1LA	0950	LH	MW410
VPH Deluxe	N	HCl	3	340mLV	0950	LH	MW410

• Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Weymouth/s	140143	6/7/17 1120	

TRC Personnel: L. Hopp

Well ID: MW 411

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	NM
Well Mouth	NM

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL [X] PVC [ ] SS

Other: _____

Well Depth 12.83 ft. [✓] top of riser [ ] top of casing [ ] _____ [ ] measured [X] historical

Water Depth 12.83 ft.

Well Volume _____

LNAPL/DNAPL Depth = ND

NAPL Thickness = ND

Depth of pump intake: _____

Static water level after pump put into well: 12.86

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes) NA

Flow rate at time of sampling: 300

Total volume of water purged: 1.75

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1120	1125	1130	1135	1140	1145	1150	1155
Temp. (°C)	P	12.56	12.73	12.70	12.70	12.79	12.70	12.75
Conduct. (µmhos/cm)	U	36819	37295	36548	35972	35320	34913	34543
DO (mg/L)	R	.19	.16	.13	.12	.10	.10	.08
pH (su)	G	6.37	6.38	6.38	6.36	6.36	6.37	6.36
ORP (millivolts)	E	70.1	70.1	70.0	69.9	69.9	70.2	70.4
Turbidity (NTU)		2.49	1.53	0.83	0.82	.77	.32	.39
Flow (ml/min)		300	300	300	300	300	300	300
Depth To Water (ft)		12.86	12.86	12.86	12.86	12.86	12.86	12.86
Cumulative Purge Vol. (gal or L)		.25	.50	.75	1	1.25	1.50	1.75

Time							Stabilization Criteria* (3 consecutive readings)
Temp. (°C)							- Temperature: ± 3 %
Conduct. (µmhos/cm)							- Conduct. (µmhos/cm): ± 3 %
DO (mg/L)							- DO (mg/L): ± 10 % (for values >0.5 mg/L)
pH (Std. Units)							- pH (Std. Units): ± 0.1 SU
Eh/ORP (millivolts)							- ORP (millivolts): ± 10 mV
Turbidity (NTU)							- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
Flow (ml/min)							- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments: ~~Set up equipment @ 1045~~ 2V H 6/7/17

Flow Thru Cell in shade/sun

Purged a gallon before starting

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH Deluxe	N	HCl	3	40 mL V	1155	FH	MW 411
EPH Deluxe			2	1 LA			MW 411

- Consult the applicable regulatory guidance for the specific criteria.

Signed: James V. Hopp

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Wegmann Project No.:	Date/Time:	Sheet 1 of 1
Spectra Energy 104161	6/6/17 1328	

TRC Personnel: B Ayes

Well ID: MW-412

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: peristaltic pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up 2 ft. (from ground)

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch

Other:

WELL MATERIAL: ✓ PVC; SS

Other:

Well Depth ft. ✓ top of riser; top of casing; ✓ measured; historical

Water Depth 13.16 ft.

Well Volume

LNAPL/DNAPL Depth = N/A

NAPL Thickness = N/A

Depth of pump intake: 19'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 230

Total volume of water purged: 2 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1320	1325	1330	1335	1340	1345	1350	1355
Temp. (°C)	Start	11.98	11.72	11.61	11.58	11.56	11.56	11.56
Conduct. (µmhos/cm)	Purge	298623	297398	298116	298697	298476	298474	298461
DO (mg/L)		0.16	0.13	0.07	0.07	0.04	0.04	0.04
pH (su)		6.44	6.42	6.40	6.39	6.39	6.39	6.39
ORP (millivolts)		-5.0	-4.7	-5.0	-5.2	-6.1	-6.7	-6.4
Turbidity (NTU)		4.61	4.17	3.91	1.80	1.21	1.31	0.97
Flow (ml/min)	230	→	→	→	→	→	→	→
Depth To Water (ft)	13.16	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)								

Time							
Temp. (°C)							
Conduct. (µmhos/cm)							
DO (mg/L)							
pH (Std. Units)							
Eh/ORP (millivolts)							
Turbidity (NTU)							
Flow (ml/min)							
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	3	1L Amber	1355		MW-412
VPH	↓	↓	3	40ml Vial	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed:

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth		6/6/17 1240	1 of 1

TRC Personnel: Annie (cornell)

Well ID: MW-413

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: SMART Troll, mach

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	-
Well Mouth	0

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: ☐ 2 inch ☒ 4 inch ☐ 6 inch

Other: ____

WELL MATERIAL: ☐ PVC ☐ SS

Other: ____

Well Depth ____ ft. ☐ top of riser ☐ top of casing ☐ ____ ☐ measured ☒ historical

Water Depth 12.82 ft.

Well Volume ____

LNAPL/DNAPL Depth = ____

NAPL Thickness = ____

Depth of pump intake: 16

Static water level after pump put into well: 12.81

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 3 gallons, sample

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1240	1245	1250	1255	1300	1305	1310	1315	
Temp. (°C)	11.64	11.78	11.78	11.78	11.77	11.78	11.79		
Conduct. (µmhos/cm)	31235	30815	30866	31135	31587	32006	32114		
DO (mg/L)	0.52	0.13	0.06	0.01	0.00	0.00	0.00		
pH (su)	6.38	6.32	6.30	6.29	6.26	6.28	6.28		
ORP (millivolts)	-30.8	-35.9	-38.8	-41.3	-43.3	-44.9	-45.4		
Turbidity (NTU)	10.8	8.89	11.2	9.89	1.89	1.21	1.64		
Flow (ml/min)	300	300	300	300	300	300	300		
Depth To Water (ft)	12.81	12.80	12.80	12.80	12.80	12.80	12.80		
Cumulative Purge Vol. (gal or L)									

Time							
Temp. (°C)							
Conduct. (µmhos/cm)							
DO (mg/L)							
pH (Std. Units)							
Eh/ORP (millivolts)							
Turbidity (NTU)							
Flow (ml/min)							
Depth To Water (ft)							
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, No. No. No

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	250A	1315		
VPH	N	HCl	3	vials	1315		

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth		6/7/17	

TRC Personnel: Annie Cornell

Well ID: MW-414

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: SMART roll, MACH

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: ☐ 2 inch ☒ 4 inch ☐ 6 inch — Other: ____

WELL MATERIAL: ☒ PVC ☐ SS — Other: ____

Well Depth ____ ft. ☐ top of riser ☐ top of casing ☐ measured ☒ historical

Water Depth 13.96 ft. — Well Volume ____

LNAPL/DNAPL Depth = 13.96

NAPL Thickness = 0.02

Depth of pump intake: 18ft

Static water level after pump put into well: 13.96

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 300

Flow rate at time of sampling: 300

Total volume of water purged: 4 gallons

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1210	1215	1220	1225	1230	1235	1240	1245	1250
Temp. (°C)	13.61	12.88	12.89	12.92	12.90	13.02	12.99	13.10	13.15
Conduct. (µmhos/cm)	4004	4612	5240	5767	6091	6217	6396	6426	6288
DO (mg/L)	0.13	0.05	0.03	0.02	0.01	0.01	0.01	0.00	0.00
pH (su)	6.91	6.66	6.55	6.50	6.48	6.46	6.45	6.44	6.44
ORP (millivolts)	-23.3	-25.1	-25.2	-24.9	-24.8	-25.1	-25.3	-25.4	-26.6
Turbidity (NTU)	69.9	53.6	40.4	36.4	35.8	31.7	21.6	18.8	17.3
Flow (ml/min)	300	300	300	300	300	300	300	300	300
Depth To Water (ft)									
Cumulative Purge Vol. (gal or L)									

Time	1255	1300
Temp. (°C)	13.32	13.34
Conduct. (µmhos/cm)	5992	5983
DO (mg/L) 0.01	0.01	0.01
pH (Std. Units)	6.45	6.44
Eh/ORP (millivolts)	-27.5	-27.9
Turbidity (NTU)	16.7	17.2
Flow (ml/min)	300	300
Depth To Water (ft)		
Cumulative Purge Vol. (gal or L)		

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: depth to water was not taken due to NAPL in the well

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	1300		MW-414
VPH	N	HCL	3	VIALS	1300		D

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth		6/6/17 1140	

TRC Personnel: Annie Connell

Well ID: MW-415

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: SMART TROLL, Hach

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	-
Well Mouth	-

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other:

WELL MATERIAL: [X] PVC [ ] SS

Other:

Well Depth: ft. [ ] top of riser [ ] top of casing [ ] measured [X] historical

Water Depth: 14.56 ft.

Well Volume:

LNAPL/DNAPL Depth = -

NAPL Thickness = -

Depth of pump intake: 17

Static water level after pump put into well: 14.45

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes)

300

Flow rate at time of sampling: 300

Total volume of water purged: 3 gallons, sample

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1140	1145	1150	1155	1200	1205	1210		
Temp. (°C)	16.36	10.33	10.24	10.24	16.24	10.24			
Conduct. (µmhos/cm)	349610	35227	35613	35715	35926	35925			
DO (mg/L)	0.05	0.02	0.00	0.00	0.00	0.00			
pH (su)	6.36	6.35	6.33	6.31	6.30	6.29			
ORP (millivolts)	33.0	31.5	29.9	29.5	29.2	29.1			
Turbidity (NTU)	26.2	5.00	1.27	3.39	0.56	1.30			
Flow (ml/min)	300	300	300	300	300	300			
Depth To Water (ft)	14.45	14.45	14.41	14.41	14.34	14.39			
Cumulative Purge Vol. (gal or L)									

Time						
Temp. (°C)						
Conduct. (µmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, No Odor, No Sheen

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCL	2	250A	1210		MW415
VPH	N	HCL	3	VOAs	1210		d

- Consult the applicable regulatory guidance for the specific criteria.

Signed:

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Weymouth Peaker Energy | Project No.: 140143 | Date/Time: 8/7/17 1030 | Sheet 1 of 1

TRC Personnel: B Ayres | Well ID: MW-416

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): N/A ft.

Riser Stick-up (from ground): N/A ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch; Other: ____

WELL MATERIAL: ✓ PVC; SS; Other: ____

Well Depth ____ ft. ✓ top of riser; top of casing; ____ ✓ measured; ✓ historical

Water Depth 10.66 ft. | Well Volume ____ | LNAPL/DNAPL Depth = N/A | NAPL Thickness = N/A

Depth of pump intake: 71

Static water level after pump put into well: 10.67

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 230

Total volume of water purged: 3.5 gal

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1030	1035	1040	1045	1050	1055	1100	1105	1110
Temp. (°C)	Start	12.6	12.4	12.4	12.3	12.4	12.5	12.4	12.4
Conduct. (µmhos/cm)	Purge	3426	8749	9837	10125	10462	10770	11422	12479
DO (mg/L)	↓	3.31	2.49	2.39	2.26	2.20	2.16	2.07	2.00
pH (su)		6.73	6.58	6.59	6.59	6.59	6.58	6.58	6.58
ORP (millivolts)		6.4	15.1	15.8	17.3	18.4	19.7	20.7	21.7
Turbidity (NTU)	↓	7.9	7.83	7.94	7.64	6.93	6.27	6.01	5.91
Flow (ml/min)	230	→	→	→	→	→	→	→	→
Depth To Water (ft)	10.66	10.68	10.69	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1115	1120	1125			
Temp. (°C)	12.4	12.5	12.5			
Conduct. (µmhos/cm)	13330	13461	14133			
DO (mg/L)	1.85	1.90	1.86			
pH (Std. Units)	6.58	6.58	6.58			
Eh/ORP (millivolts)	22.8	23.3	23.7			
Turbidity (NTU)	4.65	4.50				
Flow (ml/min)	230	→				
Depth To Water (ft)	10.69	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments: Clear, NO, NS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPA	N	HCl	2	1L Amber	1125		MW-416
VOA	↓	↓	3	40ML VOA	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: ____

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Weymouth Spectra Energy | Project No.: 140143 | Date/Time: 6/7/17 1200 | Sheet 1 of 1

TRC Personnel: B Agnes | Well ID: MW-417

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): N/A ft.

Riser Stick-up (from ground): N/A ft.

WELL DIAMETER: [✓] 2 inch [ ] 4 inch [ ] 6 inch Other: ______

WELL MATERIAL: [✓] PVC [ ] SS Other: ______

Well Depth ______ ft. [✓] top of riser [ ] top of casing [ ] measured [✓] historical

Water Depth 10.17 ft.

Well Volume ______

LNAPL/DNAPL Depth = N/A

NAPL Thickness = N/A

Depth of pump intake: 17'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 230

Total volume of water purged: 2 gal

FB 1310 TB 1315

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1200	1205	1210	1215	1220	1225	1230		
Temp. (°C)	Start	12.8	12.8	13.0	12.9	12.8	12.8		
Conduct. (µmhos/cm)	Purge	6259	6010	5680	5631	5586	5531		
DO (mg/L)	↓	0.67	0.39	0.35	0.35	0.35	0.35		
pH (su)	↓	6.64	6.61	6.58	6.57	6.57	6.56		
ORP (millivolts)	↓	24.4	23.0	20.1	18.9	17.3	15.0		
Turbidity (NTU)	↓	37.9	26.8	8.50	7.43	3.34	2.94		
Flow (ml/min)	230	→					→		
Depth To Water (ft)	10.17	10.26	10.28	→			→		
Cumulative Purge Vol. (gal or L)									

Time						
Temp. (°C)						
Conduct. (µmhos/cm)						
DO (mg/L)						
pH (Std. Units)						
Eh/ORP (millivolts)						
Turbidity (NTU)						
Flow (ml/min)						
Depth To Water (ft)						
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amgl	1230		MW-417
VPH	↓	↓	3	40mL VOA	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/22/2016 20:00	6.83			8.31			5.17		1.66			7.58	
12/22/2016 20:10	6.91			8.32			5.17		1.67				
12/22/2016 20:20	6.91			8.33			5.17		1.67				
12/22/2016 20:30	6.91			8.32			5.17		1.67			6.9	
12/22/2016 20:40	6.92			8.32			5.17		1.67				
12/22/2016 20:50	6.92			8.32			5.16		1.67				
12/22/2016 21:00	6.92			8.32			5.16		1.67			6.11	
12/22/2016 21:10	6.93			8.32			5.16		1.67				
12/22/2016 21:20	6.92			8.31			5.15		1.67				
12/22/2016 21:30	6.92			8.31			5.16		1.66			5.2	
12/22/2016 21:40	6.92			8.29			5.15		1.66				
12/22/2016 21:50	6.92			8.28			5.15		1.66				
12/22/2016 22:00	6.92			8.26			5.15		1.65			4.19	
12/22/2016 22:10	6.91			8.25			5.14		1.65				
12/22/2016 22:20	6.90			8.23			5.14		1.64				
12/22/2016 22:30	6.89			8.21			5.14		1.64			3.13	
12/22/2016 22:40	6.89			8.20			5.14		1.64				
12/22/2016 22:50	6.88			8.17			5.12		1.63				
12/22/2016 23:00	6.87			8.15			5.12		1.63			2.16	
12/22/2016 23:10	6.86			8.14			5.13		1.62				
12/22/2016 23:20	6.86			8.13			5.12		1.62				
12/22/2016 23:30	6.84			8.10			5.11		1.61			1.43	
12/22/2016 23:40	6.84			8.09			5.12		1.61				
12/22/2016 23:50	6.82			8.07			5.11		1.60				
12/23/2016 0:00	6.82			8.04			5.11		1.60			1.04	
12/23/2016 0:10	6.82			8.02			5.10		1.60				
12/23/2016 0:20	6.81			8.01			5.09		1.59				
12/23/2016 0:30	6.81			8.00			5.09		1.59			1.02	low
12/23/2016 0:40	6.81			7.99			5.08		1.59				
12/23/2016 0:50	6.80			7.98			5.07		1.58				
12/23/2016 1:00	6.80			7.97			5.07		1.59			1.29	
12/23/2016 1:10	6.80			7.96			5.07		1.59				
12/23/2016 1:20	6.80			7.95			5.06		1.58				
12/23/2016 1:30	6.80			7.95			5.05		1.58			1.74	
12/23/2016 1:40	6.80			7.94			5.05		1.58				
12/23/2016 1:50	6.80			7.94			5.05		1.59				
12/23/2016 2:00	6.80			7.93			5.04		1.59			2.31	
12/23/2016 2:10	6.80			7.94			5.04		1.59				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/23/2016 2:20	6.81			7.93			5.04		1.60				
12/23/2016 2:30	6.81			7.94			5.04		1.60			2.98	
12/23/2016 2:40	6.81			7.94			5.04		1.60				
12/23/2016 2:50	6.82			7.94			5.04		1.61				
12/23/2016 3:00	6.82			7.94			5.03		1.61			3.78	
12/23/2016 3:10	6.82			7.95			5.03		1.62				
12/23/2016 3:20	6.83			7.95			5.03		1.62				
12/23/2016 3:30	6.83			7.95			5.01		1.63			4.73	
12/23/2016 3:40	6.83			7.95			5.02		1.63				
12/23/2016 3:50	6.84			7.95			5.00		1.63				
12/23/2016 4:00	6.84			7.96			4.99		1.63			5.78	
12/23/2016 4:10	6.85			7.96			4.99		1.64				
12/23/2016 4:20	6.85			7.96			4.98		1.65				
12/23/2016 4:30	6.86			7.95			4.96		1.65			6.84	
12/23/2016 4:40	6.86			7.95			4.96		1.65				
12/23/2016 4:50	6.87			7.96			4.96		1.66				
12/23/2016 5:00	6.87			7.96			4.96		1.65			7.78	
12/23/2016 5:10	6.88			7.96			4.95		1.66				
12/23/2016 5:20	6.88			7.96			4.94		1.66				
12/23/2016 5:30	6.89			7.97			4.94		1.67			8.54	
12/23/2016 5:40	6.89			7.97			4.94		1.66				
12/23/2016 5:50	6.89			7.98			4.94		1.67				
12/23/2016 6:00	6.90			7.97			4.93		1.67			9.06	
12/23/2016 6:10	6.90			7.98			4.93		1.68				
12/23/2016 6:20	6.91			7.98			4.93		1.68				
12/23/2016 6:30	6.91			7.98			4.92		1.68			9.32	
12/23/2016 6:40	6.91			7.98			4.91		1.68				
12/23/2016 6:50	6.92			7.98			4.91		1.68				
12/23/2016 7:00	6.92			7.99			4.91		1.68			9.33	high
12/23/2016 7:10	6.92			8.00			4.92		1.69				
12/23/2016 7:20	6.92			7.99			4.91		1.69				
12/23/2016 7:30	6.93			8.00			4.92		1.69			9.11	
12/23/2016 7:40	6.93			8.01			4.91		1.69				
12/23/2016 7:50	6.93			8.01			4.91		1.69				
12/23/2016 8:00	6.93			8.01			4.91		1.70	7:30	0.11	8.7	
12/23/2016 8:10	6.94			8.02			4.89		1.70				
12/23/2016 8:20	6.94			8.02			4.90		1.69				
12/23/2016 8:30	6.94			8.03	8:00	0.09	4.90		1.70			8.13	
12/23/2016 8:40	6.95	8:10	0.15	8.03			4.89		1.70				
12/23/2016 8:50	6.94			8.02			4.89		1.70				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/23/2016 9:00	6.94			8.03			4.88		1.70			7.44	
12/23/2016 9:10	6.95			8.02			4.88		1.70				
12/23/2016 9:20	6.95			8.01			4.88		1.70				
12/23/2016 9:30	6.95			8.01			4.87		1.70			6.62	
12/23/2016 9:40	6.95			8.00			4.87		1.70				
12/23/2016 9:50	6.95			7.97			4.86		1.70				
12/23/2016 10:00	6.95			7.97			4.85		1.69			5.66	
12/23/2016 10:10	6.95			7.94			4.85		1.69				
12/23/2016 10:20	6.94			7.92			4.84		1.69				
12/23/2016 10:30	6.93			7.90			4.83		1.69			4.59	
12/23/2016 10:40	6.93			7.87			4.82		1.68				
12/23/2016 10:50	6.92			7.84			4.82		1.68				
12/23/2016 11:00	6.91			7.82			4.82		1.67			3.47	
12/23/2016 11:10	6.91			7.79			4.80		1.66				
12/23/2016 11:20	6.89			7.77			4.80		1.66				
12/23/2016 11:30	6.88			7.74			4.78		1.65			2.45	
12/23/2016 11:40	6.87			7.72			4.77		1.64				
12/23/2016 11:50	6.86			7.70			4.77		1.64				
12/23/2016 12:00	6.85			7.67			4.76		1.63			1.68	
12/23/2016 12:10	6.83			7.64			4.77		1.63				
12/23/2016 12:20	6.83			7.63			4.76		1.62				
12/23/2016 12:30	6.81			7.61			4.75		1.62			1.25	
12/23/2016 12:40	6.81			7.60			4.74		1.61				
12/23/2016 12:50	6.80			7.57			4.74		1.61				
12/23/2016 13:00	6.80			7.56			4.74		1.60			1.17	low
12/23/2016 13:10	6.79			7.54			4.74		1.60				
12/23/2016 13:20	6.79			7.53	6:20	0.50	4.72		1.60				
12/23/2016 13:30	6.78	6:30	0.16	7.53			4.73		1.59	6:30	0.10	1.36	
12/23/2016 13:40	6.78			7.53			4.74		1.59				
12/23/2016 13:50	6.78			7.53			4.74		1.59				
12/23/2016 14:00	6.78			7.54			4.74		1.59			1.72	
12/23/2016 14:10	6.78			7.53			4.73		1.59				
12/23/2016 14:20	6.78			7.54			4.74		1.59				
12/23/2016 14:30	6.78			7.54			4.75		1.59			2.18	
12/23/2016 14:40	6.78			7.54			4.75		1.59				
12/23/2016 14:50	6.78			7.55			4.75		1.59				
12/23/2016 15:00	6.78			7.55			4.76		1.60			2.76	
12/23/2016 15:10	6.78			7.57			4.76		1.60				
12/23/2016 15:20	6.79			7.58			4.76		1.60				
12/23/2016 15:30	6.79			7.58			4.77		1.61			3.48	

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/23/2016 15:40	6.79			7.60			4.78		1.61				
12/23/2016 15:50	6.79			7.61			4.78		1.61				
12/23/2016 16:00	6.80			7.62			4.79		1.62			4.36	
12/23/2016 16:10	6.80			7.63			4.80		1.62				
12/23/2016 16:20	6.80			7.64			4.79		1.63				
12/23/2016 16:30	6.81			7.64			4.79		1.63			5.33	
12/23/2016 16:40	6.81			7.65			4.79		1.64				
12/23/2016 16:50	6.82			7.66			4.80		1.64				
12/23/2016 17:00	6.83			7.67			4.80		1.65			6.31	
12/23/2016 17:10	6.83			7.67			4.80		1.65				
12/23/2016 17:20	6.83			7.68			4.79		1.66				
12/23/2016 17:30	6.84			7.69			4.80		1.66			7.18	
12/23/2016 17:40	6.84			7.69			4.79		1.66				
12/23/2016 17:50	6.85			7.69			4.79		1.67				
12/23/2016 18:00	6.85			7.70			4.79		1.67			7.87	
12/23/2016 18:10	6.86			7.71			4.79		1.67				
12/23/2016 18:20	6.87			7.72			4.79		1.68				
12/23/2016 18:30	6.87			7.73			4.79		1.68			8.32	
12/23/2016 18:40	6.87			7.73			4.79		1.68				
12/23/2016 18:50	6.87			7.74			4.79		1.69				
12/23/2016 19:00	6.88			7.74			4.78		1.70			8.54	high
12/23/2016 19:10	6.89			7.75			4.79		1.69				
12/23/2016 19:20	6.89			7.76			4.79		1.70				
12/23/2016 19:30	6.90			7.76			4.79		1.70			8.53	
12/23/2016 19:40	6.90			7.77			4.79		1.70				
12/23/2016 19:50	6.91			7.77			4.80		1.70				
12/23/2016 20:00	6.91			7.78			4.79		1.70			8.31	
12/23/2016 20:10	6.91			7.79			4.79		1.71				
12/23/2016 20:20	6.92			7.78			4.79		1.71				
12/23/2016 20:30	6.92			7.79			4.78		1.71			7.92	
12/23/2016 20:40	6.92			7.79			4.78		1.71				
12/23/2016 20:50	6.92			7.80			4.78		1.71				
12/23/2016 21:00	6.93			7.80			4.78		1.71			7.38	
12/23/2016 21:10	6.94	8:10	0.15	7.80			4.77		1.71				
12/23/2016 21:20	6.93			7.81			4.77		1.71				
12/23/2016 21:30	6.94			7.81			4.77		1.72	8:30	0.12	6.73	
12/23/2016 21:40	6.94			7.82			4.78		1.71				
12/23/2016 21:50	6.95			7.82			4.77		1.72				
12/23/2016 22:00	6.95			7.82			4.77		1.71			5.96	
12/23/2016 22:10	6.94			7.83			4.78		1.72				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/23/2016 22:20	6.95			7.83			4.78		1.72				
12/23/2016 22:30	6.95			7.84	9:30	0.31	4.77		1.71			5.06	
12/23/2016 22:40	6.95			7.83			4.77		1.72				
12/23/2016 22:50	6.95			7.82			4.77		1.71				
12/23/2016 23:00	6.94			7.81			4.77		1.71			4.06	
12/23/2016 23:10	6.95			7.80			4.77		1.71				
12/23/2016 23:20	6.94			7.79			4.77		1.71				
12/23/2016 23:30	6.94			7.77			4.77		1.70			3.04	
12/23/2016 23:40	6.94			7.77			4.76		1.70				
12/23/2016 23:50	6.93			7.76			4.77		1.70				
12/24/2016 0:00	6.93			7.75			4.78		1.69			2.14	
12/24/2016 0:10	6.92			7.73			4.77		1.69				
12/24/2016 0:20	6.92			7.72			4.77		1.68				
12/24/2016 0:30	6.91			7.70			4.77		1.68			1.51	
12/24/2016 0:40	6.90			7.69			4.78		1.68				
12/24/2016 0:50	6.90			7.68			4.78		1.68				
12/24/2016 1:00	6.89			7.68			4.78		1.67	6:00	0.05	1.23	low
12/24/2016 1:10	6.89			7.67			4.78		1.67				
12/24/2016 1:20	6.89			7.66			4.78		1.67				
12/24/2016 1:30	6.88			7.66			4.78		1.67			1.3	
12/24/2016 1:40	6.88			7.64	6:40	0.19	4.78		1.67				
12/24/2016 1:50	6.88			7.65			4.78		1.67				
12/24/2016 2:00	6.87	7:00	0.06	7.65			4.79		1.67			1.61	
12/24/2016 2:10	6.87			7.65			4.78		1.67				
12/24/2016 2:20	6.88			7.65			4.79		1.67				
12/24/2016 2:30	6.88			7.65			4.79		1.67			2.07	
12/24/2016 2:40	6.88			7.66			4.80		1.67				
12/24/2016 2:50	6.87			7.66			4.80		1.68				
12/24/2016 3:00	6.88			7.68			4.80		1.68			2.64	
12/24/2016 3:10	6.88			7.68			4.80		1.69				
12/24/2016 3:20	6.88			7.68			4.79		1.69				
12/24/2016 3:30	6.89			7.69			4.80		1.69			3.32	
12/24/2016 3:40	6.89			7.70			4.80		1.70				
12/24/2016 3:50	6.89			7.72			4.81		1.70				
12/24/2016 4:00	6.90			7.72			4.81		1.70			4.14	
12/24/2016 4:10	6.90			7.74			4.82		1.70				
12/24/2016 4:20	6.90			7.74			4.82		1.71				
12/24/2016 4:30	6.91			7.75			4.82		1.71			5.1	
12/24/2016 4:40	6.91			7.76			4.82		1.71				
12/24/2016 4:50	6.92			7.76			4.82		1.72				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/24/2016 5:00	6.92			7.77			4.82		1.72			6.15	
12/24/2016 5:10	6.93			7.78			4.82		1.72				
12/24/2016 5:20	6.93			7.78			4.82		1.72				
12/24/2016 5:30	6.93			7.80			4.82		1.73			7.17	
12/24/2016 5:40	6.93			7.81			4.84		1.73				
12/24/2016 5:50	6.93			7.82			4.84		1.73				
12/24/2016 6:00	6.94			7.85			4.85		1.73			8.06	
12/24/2016 6:10	6.94			7.86			4.85		1.74				
12/24/2016 6:20	6.95			7.86			4.87		1.74				
12/24/2016 6:30	6.95			7.88			4.87		1.74			8.74	
12/24/2016 6:40	6.95			7.90			4.88		1.74				
12/24/2016 6:50	6.95			7.91			4.88		1.74				
12/24/2016 7:00	6.95			7.91			4.88		1.74			9.19	
12/24/2016 7:10	6.95			7.92			4.90		1.75				
12/24/2016 7:20	6.96			7.94			4.91		1.75				
12/24/2016 7:30	6.96			7.96			4.92		1.75			9.38	
12/24/2016 7:40	6.96			7.97			4.92		1.75				
12/24/2016 7:50	6.96			7.96			4.92		1.76				
12/24/2016 8:00	6.96			7.97			4.92		1.76			9.33	high
12/24/2016 8:10	6.97			7.98			4.93		1.76				
12/24/2016 8:20	6.97			7.99			4.92		1.76				
12/24/2016 8:30	6.97			7.99			4.92		1.76			9.06	
12/24/2016 8:40	6.97			8.00			4.94		1.76				
12/24/2016 8:50	6.97			8.03			4.96		1.76				
12/24/2016 9:00	6.98			8.03			4.96		1.76			8.6	
12/24/2016 9:10	6.99	8:10	0.11	8.03			4.95		1.76				
12/24/2016 9:20	6.98			8.05			4.96		1.77	8:20	0.09		
12/24/2016 9:30	6.98			8.05			4.96		1.77			8	
12/24/2016 9:40	6.99			8.04			4.96		1.77				
12/24/2016 9:50	6.99			8.06			4.97		1.77				
12/24/2016 10:00	6.99			8.06			4.97		1.77			7.27	
12/24/2016 10:10	7.00			8.07	9:10	0.43	4.98		1.77				
12/24/2016 10:20	6.99			8.07			4.98		1.77				
12/24/2016 10:30	6.99			8.07			4.98		1.77			6.4	
12/24/2016 10:40	7.00			8.07			4.99		1.77				
12/24/2016 10:50	6.99			8.06			4.97		1.77				
12/24/2016 11:00	6.99			8.04			4.97		1.76			5.39	
12/24/2016 11:10	6.99			8.03			4.97		1.76				
12/24/2016 11:20	6.99			8.02			4.98		1.75				
12/24/2016 11:30	6.99			8.00			4.97		1.76			4.27	

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Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
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Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/24/2016 11:40	6.97			7.98			4.97		1.75				
12/24/2016 11:50	6.97			7.97			4.98		1.74				
12/24/2016 12:00	6.96			7.97			4.99		1.74			3.15	
12/24/2016 12:10	6.95			7.95			5.00		1.73				
12/24/2016 12:20	6.94			7.94			5.00		1.72				
12/24/2016 12:30	6.92			7.92			5.00		1.72			2.16	
12/24/2016 12:40	6.92			7.90			5.00		1.71				
12/24/2016 12:50	6.90			7.88			5.00		1.70				
12/24/2016 13:00	6.89			7.87			5.00		1.70			1.46	
12/24/2016 13:10	6.88			7.85			5.01		1.69				
12/24/2016 13:20	6.87			7.85			5.02		1.68				
12/24/2016 13:30	6.86			7.85			5.03		1.68			1.12	
12/24/2016 13:40	6.85			7.85			5.05		1.67				
12/24/2016 13:50	6.85			7.84			5.04		1.67				
12/24/2016 14:00	6.84			7.83	6:00	0.24	5.06		1.66			1.1	low
12/24/2016 14:10	6.84			7.84			5.06		1.66				
12/24/2016 14:20	6.84			7.83			5.07		1.65				
12/24/2016 14:30	6.83			7.84			5.08		1.66			1.32	
12/24/2016 14:40	6.83			7.84			5.09		1.65	6:40	0.11		
12/24/2016 14:50	6.83			7.85			5.10		1.65				
12/24/2016 15:00	6.82	7:00	0.17	7.85			5.11		1.65			1.69	
12/24/2016 15:10	6.82			7.85			5.11		1.66				
12/24/2016 15:20	6.82			7.86			5.12		1.65				
12/24/2016 15:30	6.82			7.87			5.13		1.66			2.16	
12/24/2016 15:40	6.82			7.89			5.14		1.66				
12/24/2016 15:50	6.82			7.90			5.14		1.65				
12/24/2016 16:00	6.82			7.90			5.15		1.66			2.76	
12/24/2016 16:10	6.82			7.92			5.16		1.66				
12/24/2016 16:20	6.82			7.91			5.16		1.66				
12/24/2016 16:30	6.82			7.92			5.17		1.67			3.52	
12/24/2016 16:40	6.82			7.94			5.18		1.69				
12/24/2016 16:50	6.83			7.96			5.18		1.68				
12/24/2016 17:00	6.83			7.96			5.20		1.69			4.43	
12/24/2016 17:10	6.83			7.97			5.20		1.69				
12/24/2016 17:20	6.84			7.99			5.21		1.70				
12/24/2016 17:30	6.84			8.01			5.22		1.71			5.42	
12/24/2016 17:40	6.85			8.02			5.22		1.71				
12/24/2016 17:50	6.85			8.04			5.22		1.71				
12/24/2016 18:00	6.85			8.04			5.23		1.72			6.39	
12/24/2016 18:10	6.85			8.04			5.23		1.72				

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Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/24/2016 18:20	6.86			8.05			5.23		1.72				
12/24/2016 18:30	6.87			8.06			5.22		1.72			7.23	
12/24/2016 18:40	6.87			8.07			5.22		1.72				
12/24/2016 18:50	6.88			8.07			5.22		1.73				
12/24/2016 19:00	6.88			8.07			5.22		1.73			7.87	
12/24/2016 19:10	6.89			8.08			5.21		1.73				
12/24/2016 19:20	6.89			8.08			5.21		1.74				
12/24/2016 19:30	6.89			8.09			5.21		1.74			8.28	
12/24/2016 19:40	6.90			8.09			5.20		1.75				
12/24/2016 19:50	6.90			8.09			5.20		1.75				
12/24/2016 20:00	6.91			8.10			5.20		1.75			8.46	high
12/24/2016 20:10	6.91			8.10			5.20		1.75				
12/24/2016 20:20	6.92			8.09			5.20		1.76				
12/24/2016 20:30	6.93			8.10			5.20		1.76			8.41	
12/24/2016 20:40	6.93			8.10			5.20		1.76				
12/24/2016 20:50	6.93			8.11			5.19		1.77				
12/24/2016 21:00	6.94			8.11			5.18		1.77			8.16	
12/24/2016 21:10	6.94			8.12			5.18		1.77				
12/24/2016 21:20	6.94			8.12			5.17		1.77				
12/24/2016 21:30	6.95			8.12			5.17		1.78	7:30	0.12	7.74	
12/24/2016 21:40	6.95			8.12			5.17		1.78				
12/24/2016 21:50	6.95			8.11			5.17		1.78				
12/24/2016 22:00	6.96			8.12			5.17		1.78			7.2	
12/24/2016 22:10	6.96			8.13			5.17		1.78				
12/24/2016 22:20	6.96			8.14			5.17		1.78				
12/24/2016 22:30	6.97			8.15	8:30	0.31	5.17		1.78			6.54	
12/24/2016 22:40	6.97			8.14			5.16		1.78				
12/24/2016 22:50	6.98	8:50	0.16	8.13			5.15		1.78				
12/24/2016 23:00	6.97			8.13			5.14		1.78			5.75	
12/24/2016 23:10	6.98			8.12			5.13		1.78				
12/24/2016 23:20	6.98			8.11			5.12		1.78				
12/24/2016 23:30	6.98			8.12			5.12		1.78			4.83	
12/24/2016 23:40	6.97			8.10			5.11		1.78				
12/24/2016 23:50	6.98			8.09			5.11		1.78				
12/25/2016 0:00	6.97			8.08			5.11		1.77			3.82	
12/25/2016 0:10	6.98			8.05			5.10		1.77				
12/25/2016 0:20	6.97			8.04			5.10		1.76				
12/25/2016 0:30	6.97			8.01			5.09		1.76			2.83	
12/25/2016 0:40	6.96			7.99			5.08		1.76				
12/25/2016 0:50	6.96			7.98			5.07		1.76				

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6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/25/2016 1:00	6.95			7.97			5.07		1.75			2.01	
12/25/2016 1:10	6.94			7.94			5.06		1.75				
12/25/2016 1:20	6.93			7.93			5.06		1.74				
12/25/2016 1:30	6.93			7.90			5.05		1.74			1.5	
12/25/2016 1:40	6.92			7.88			5.04		1.73				
12/25/2016 1:50	6.91			7.86			5.04		1.73				
12/25/2016 2:00	6.91			7.85			5.04		1.73			1.34	low
12/25/2016 2:10	6.90			7.84			5.04		1.72				
12/25/2016 2:20	6.90			7.83			5.03		1.72				
12/25/2016 2:30	6.90			7.82			5.04		1.72			1.5	
12/25/2016 2:40	6.89			7.81			5.04		1.71	6:40	0.06		
12/25/2016 2:50	6.89			7.80			5.03		1.71				
12/25/2016 3:00	6.88	7:00	0.09	7.80			5.03		1.72			1.87	
12/25/2016 3:10	6.88			7.80			5.04		1.72				
12/25/2016 3:20	6.88			7.80			5.03		1.72				
12/25/2016 3:30	6.88			7.80			5.03		1.72			2.37	
12/25/2016 3:40	6.88			7.79	7:40	0.36	5.03		1.72				
12/25/2016 3:50	6.88			7.79			5.03		1.72				
12/25/2016 4:00	6.88			7.79			5.03		1.72			2.97	
12/25/2016 4:10	6.89			7.79			5.03		1.73				
12/25/2016 4:20	6.88			7.80			5.03		1.73				
12/25/2016 4:30	6.89			7.80			5.02		1.73			3.7	
12/25/2016 4:40	6.89			7.80			5.02		1.74				
12/25/2016 4:50	6.89			7.80			5.02		1.74				
12/25/2016 5:00	6.90			7.80			5.01		1.74			4.57	
12/25/2016 5:10	6.90			7.80			5.00		1.75				
12/25/2016 5:20	6.91			7.81			4.99		1.75				
12/25/2016 5:30	6.91			7.82			4.99		1.76			5.56	
12/25/2016 5:40	6.91			7.82			4.99		1.75				
12/25/2016 5:50	6.92			7.83			4.99		1.76				
12/25/2016 6:00	6.92			7.84			4.99		1.77			6.61	
12/25/2016 6:10	6.93			7.84			4.99		1.77				
12/25/2016 6:20	6.93			7.84			4.98		1.78				
12/25/2016 6:30	6.93			7.85			4.98		1.77			7.6	
12/25/2016 6:40	6.94			7.86			4.99		1.78				
12/25/2016 6:50	6.94			7.86			4.99		1.78				
12/25/2016 7:00	6.95			7.87			4.99		1.78			8.43	
12/25/2016 7:10	6.95			7.88			4.99		1.79				
12/25/2016 7:20	6.95			7.89			4.99		1.79				
12/25/2016 7:30	6.96			7.90			4.99		1.79			9.03	

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Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/25/2016 7:40	6.97			7.89			4.98		1.79				
12/25/2016 7:50	6.97			7.90			4.98		1.79				
12/25/2016 8:00	6.97			7.90			4.98		1.80			9.38	
12/25/2016 8:10	6.98			7.92			4.99		1.80				
12/25/2016 8:20	6.98			7.91			4.98		1.80				
12/25/2016 8:30	6.98			7.93			4.98		1.80			9.48	high
12/25/2016 8:40	6.99			7.92			4.97		1.80				
12/25/2016 8:50	6.99			7.93			4.98		1.80				
12/25/2016 9:00	6.98			7.93			4.97		1.80			9.33	
12/25/2016 9:10	6.99			7.93			4.97		1.81				
12/25/2016 9:20	6.99			7.94			4.97		1.81				
12/25/2016 9:30	6.99			7.95	7:30	0.16	4.97		1.82	7:30	0.10	8.98	
12/25/2016 9:40	7.00			7.94			4.97		1.81				
12/25/2016 9:50	7.00			7.95			4.96		1.81				
12/25/2016 10:00	7.00			7.94			4.96		1.82			8.44	
12/25/2016 10:10	7.01			7.94			4.94		1.81				
12/25/2016 10:20	7.01			7.94			4.94		1.82				
12/25/2016 10:30	7.01			7.94			4.93		1.81			7.77	
12/25/2016 10:40	7.01			7.94			4.93		1.82				
12/25/2016 10:50	7.01			7.93			4.92		1.82				
12/25/2016 11:00	7.01			7.93			4.92		1.82			6.96	
12/25/2016 11:10	7.01			7.92			4.91		1.82				
12/25/2016 11:20	7.01			7.91			4.91		1.82				
12/25/2016 11:30	7.01			7.91			4.90		1.82			6.02	
12/25/2016 11:40	7.02	9:40	0.13	7.89			4.89		1.82				
12/25/2016 11:50	7.01			7.88			4.89		1.82				
12/25/2016 12:00	7.02			7.87			4.89		1.82			4.94	
12/25/2016 12:10	7.01			7.85			4.87		1.81				
12/25/2016 12:20	7.01			7.82			4.87		1.81				
12/25/2016 12:30	7.01			7.81			4.86		1.80			3.79	
12/25/2016 12:40	7.00			7.77			4.85		1.80				
12/25/2016 12:50	7.00			7.75			4.84		1.80				
12/25/2016 13:00	6.98			7.72			4.83		1.79			2.67	
12/25/2016 13:10	6.97			7.70			4.82		1.79				
12/25/2016 13:20	6.97			7.66			4.82		1.78				
12/25/2016 13:30	6.95			7.64			4.81		1.77			1.75	
12/25/2016 13:40	6.94			7.63			4.81		1.77				
12/25/2016 13:50	6.93			7.61			4.81		1.76				
12/25/2016 14:00	6.92			7.59			4.80		1.75			1.16	
12/25/2016 14:10	6.91			7.56			4.79		1.75				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/25/2016 14:20	6.90			7.54			4.78		1.75				
12/25/2016 14:30	6.90			7.53			4.78		1.74			0.92	low
12/25/2016 14:40	6.89			7.50			4.77		1.74				
12/25/2016 14:50	6.89			7.48			4.76		1.73				
12/25/2016 15:00	6.88			7.46			4.76		1.73			1	
12/25/2016 15:10	6.88			7.46			4.75		1.73				
12/25/2016 15:20	6.87			7.44			4.74		1.73				
12/25/2016 15:30	6.87			7.42			4.73		1.73			1.28	
12/25/2016 15:40	6.87			7.42			4.72		1.72	7:10	0.09		
12/25/2016 15:50	6.87			7.40			4.72		1.73				
12/25/2016 16:00	6.86	7:30	0.15	7.40			4.72		1.73			1.69	
12/25/2016 16:10	6.86			7.39			4.71		1.73				
12/25/2016 16:20	6.86			7.38			4.70		1.73				
12/25/2016 16:30	6.86			7.38			4.69		1.73			2.22	
12/25/2016 16:40	6.87			7.37	8:10	0.58	4.69		1.74				
12/25/2016 16:50	6.86			7.37			4.69		1.74				
12/25/2016 17:00	6.87			7.37			4.69		1.75			2.88	
12/25/2016 17:10	6.87			7.37			4.68		1.75				
12/25/2016 17:20	6.87			7.37			4.68		1.75				
12/25/2016 17:30	6.87			7.37			4.68		1.75			3.71	
12/25/2016 17:40	6.87			7.38			4.68		1.76				
12/25/2016 17:50	6.87			7.39			4.68		1.76				
12/25/2016 18:00	6.88			7.38			4.67		1.77			4.68	
12/25/2016 18:10	6.88			7.39			4.67		1.77				
12/25/2016 18:20	6.88			7.40			4.66		1.77				
12/25/2016 18:30	6.89			7.39			4.65		1.78			5.69	
12/25/2016 18:40	6.90			7.39			4.64		1.79				
12/25/2016 18:50	6.90			7.39			4.64		1.79				
12/25/2016 19:00	6.91			7.40			4.63		1.79			6.64	
12/25/2016 19:10	6.91			7.40			4.62		1.80				
12/25/2016 19:20	6.92			7.41			4.62		1.80				
12/25/2016 19:30	6.92			7.41			4.62		1.80			7.44	
12/25/2016 19:40	6.93			7.42			4.62		1.81				
12/25/2016 19:50	6.93			7.42			4.61		1.81				
12/25/2016 20:00	6.93			7.42			4.61		1.81			8.01	
12/25/2016 20:10	6.94			7.42			4.60		1.82				
12/25/2016 20:20	6.95			7.42			4.60		1.82				
12/25/2016 20:30	6.95			7.43			4.60		1.82			8.35	
12/25/2016 20:40	6.95			7.42			4.59		1.82				
12/25/2016 20:50	6.96			7.44			4.59		1.83				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/25/2016 21:00	6.96			7.43			4.59		1.83			8.46	high
12/25/2016 21:10	6.97			7.43			4.58		1.83				
12/25/2016 21:20	6.97			7.44			4.58		1.83				
12/25/2016 21:30	6.98			7.44			4.58		1.84			8.33	
12/25/2016 21:40	6.98			7.44			4.57		1.84				
12/25/2016 21:50	6.99			7.44			4.57		1.84				
12/25/2016 22:00	6.99			7.45			4.56		1.84			8.02	
12/25/2016 22:10	6.99			7.44			4.55		1.84				
12/25/2016 22:20	7.00			7.44			4.54		1.85				
12/25/2016 22:30	7.00			7.44			4.54		1.85			7.55	
12/25/2016 22:40	7.01			7.45			4.54		1.85				
12/25/2016 22:50	7.00			7.45			4.53		1.85				
12/25/2016 23:00	7.01			7.45			4.53		1.85			6.96	
12/25/2016 23:10	7.01			7.46			4.53		1.85				
12/25/2016 23:20	7.02			7.45			4.52		1.85				
12/25/2016 23:30	7.01			7.45			4.52		1.85			6.25	
12/25/2016 23:40	7.02			7.46	9:10	0.09	4.51		1.85				
12/25/2016 23:50	7.02			7.46			4.51		1.86	9:20	0.13		
12/26/2016 0:00	7.03	9:30	0.16	7.46			4.50		1.86			5.41	
12/26/2016 0:10	7.02			7.46			4.51		1.86				
12/26/2016 0:20	7.03			7.45			4.48		1.86				
12/26/2016 0:30	7.03			7.45			4.49		1.86			4.46	
12/26/2016 0:40	7.03			7.44			4.49		1.86				
12/26/2016 0:50	7.03			7.44			4.47		1.86				
12/26/2016 1:00	7.03			7.42			4.47		1.85			3.45	
12/26/2016 1:10	7.03			7.42			4.46		1.85				
12/26/2016 1:20	7.03			7.40			4.46		1.85				
12/26/2016 1:30	7.03			7.39			4.45		1.85			2.52	
12/26/2016 1:40	7.02			7.37			4.45		1.85				
12/26/2016 1:50	7.03			7.36			4.45		1.85				
12/26/2016 2:00	7.02			7.35			4.44		1.85			1.81	
12/26/2016 2:10	7.02			7.34			4.45		1.84				
12/26/2016 2:20	7.02			7.32			4.43		1.84				
12/26/2016 2:30	7.01			7.31			4.44		1.84			1.43	
12/26/2016 2:40	7.01			7.29			4.44		1.83				
12/26/2016 2:50	7.01			7.29			4.44		1.83				
12/26/2016 3:00	7.00	6:00	0.02	7.29			4.43		1.83	6:00	0.03	1.41	low
12/26/2016 3:10	7.01			7.27			4.43		1.83				
12/26/2016 3:20	7.00			7.27			4.43		1.83				
12/26/2016 3:30	7.00			7.26			4.43		1.83			1.69	

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Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/26/2016 3:40	7.00			7.26			4.42		1.83				
12/26/2016 3:50	7.00			7.26			4.43		1.83				
12/26/2016 4:00	7.00			7.25	7:00	0.20	4.43		1.83			2.14	
12/26/2016 4:10	7.00			7.25			4.43		1.84				
12/26/2016 4:20	7.00			7.25			4.42		1.84				
12/26/2016 4:30	7.00			7.25			4.42		1.84			2.71	
12/26/2016 4:40	7.01			7.25			4.42		1.84				
12/26/2016 4:50	7.01			7.25			4.41		1.84				
12/26/2016 5:00	7.01			7.25			4.41		1.85			3.38	
12/26/2016 5:10	7.01			7.25			4.41		1.85				
12/26/2016 5:20	7.01			7.25			4.41		1.85				
12/26/2016 5:30	7.02			7.26			4.40		1.85			4.17	
12/26/2016 5:40	7.02			7.26			4.39		1.86				
12/26/2016 5:50	7.02			7.27			4.40		1.86				
12/26/2016 6:00	7.02			7.27			4.40		1.86			5.11	
12/26/2016 6:10	7.03			7.27			4.39		1.86				
12/26/2016 6:20	7.03			7.28			4.39		1.87				
12/26/2016 6:30	7.03			7.29			4.39		1.87			6.14	
12/26/2016 6:40	7.03			7.29			4.39		1.87				
12/26/2016 6:50	7.03			7.30			4.40		1.87				
12/26/2016 7:00	7.03			7.31			4.40		1.87			7.19	
12/26/2016 7:10	7.04			7.33			4.41		1.87				
12/26/2016 7:20	7.04			7.34			4.42		1.87				
12/26/2016 7:30	7.04			7.35			4.43		1.88			8.12	
12/26/2016 7:40	7.05			7.36			4.43		1.88				
12/26/2016 7:50	7.05			7.35			4.42		1.88				
12/26/2016 8:00	7.05			7.37			4.44		1.88			8.86	
12/26/2016 8:10	7.05			7.38			4.43		1.89				
12/26/2016 8:20	7.05			7.39			4.44		1.89				
12/26/2016 8:30	7.06			7.38			4.44		1.89			9.36	
12/26/2016 8:40	7.06			7.39			4.44		1.89				
12/26/2016 8:50	7.06			7.39			4.45		1.89				
12/26/2016 9:00	7.06			7.41			4.45		1.89			9.58	high
12/26/2016 9:10	7.06			7.40			4.44		1.89				
12/26/2016 9:20	7.06			7.41			4.44		1.90				
12/26/2016 9:30	7.07			7.40			4.44		1.90			9.55	
12/26/2016 9:40	7.08			7.40			4.44		1.90				
12/26/2016 9:50	7.08			7.39			4.43		1.90				
12/26/2016 10:00	7.08			7.40			4.42		1.90			9.27	
12/26/2016 10:10	7.08			7.40			4.42		1.90				

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Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/26/2016 10:20	7.08			7.40			4.44		1.91	7:20	0.08		
12/26/2016 10:30	7.08			7.42			4.43		1.91			8.79	
12/26/2016 10:40	7.08			7.43	7:40	0.17	4.44		1.91				
12/26/2016 10:50	7.09			7.43			4.44		1.91				
12/26/2016 11:00	7.09			7.43			4.44		1.91			8.15	
12/26/2016 11:10	7.09			7.43			4.44		1.91				
12/26/2016 11:20	7.09			7.43			4.44		1.91				
12/26/2016 11:30	7.09			7.43			4.44		1.91			7.38	
12/26/2016 11:40	7.10	8:40	0.09	7.43			4.43		1.91				
12/26/2016 11:50	7.09			7.43			4.43		1.91				
12/26/2016 12:00	7.10			7.43			4.43		1.91			6.48	
12/26/2016 12:10	7.09			7.43			4.43		1.91				
12/26/2016 12:20	7.09			7.42			4.44		1.91				
12/26/2016 12:30	7.09			7.41			4.43		1.90			5.46	
12/26/2016 12:40	7.09			7.39			4.44		1.90				
12/26/2016 12:50	7.09			7.38			4.44		1.90				
12/26/2016 13:00	7.08			7.37			4.44		1.89			4.32	
12/26/2016 13:10	7.08			7.35			4.43		1.88				
12/26/2016 13:20	7.08			7.33			4.43		1.88				
12/26/2016 13:30	7.06			7.33			4.45		1.87			3.15	
12/26/2016 13:40	7.06			7.32			4.44		1.86				
12/26/2016 13:50	7.04			7.30			4.45		1.85				
12/26/2016 14:00	7.02			7.29			4.46		1.85			2.08	
12/26/2016 14:10	7.01			7.28			4.47		1.84				
12/26/2016 14:20	7.00			7.26			4.47		1.83				
12/26/2016 14:30	6.99			7.26			4.48		1.82			1.27	
12/26/2016 14:40	6.98			7.25			4.50		1.82				
12/26/2016 14:50	6.96			7.24			4.50		1.81				
12/26/2016 15:00	6.95			7.22			4.50		1.81			0.82	
12/26/2016 15:10	6.94			7.20			4.50		1.80				
12/26/2016 15:20	6.93			7.19			4.51		1.79				
12/26/2016 15:30	6.93			7.18			4.51		1.79			0.73	low
12/26/2016 15:40	6.92			7.18			4.52		1.78				
12/26/2016 15:50	6.91			7.17			4.53		1.78				
12/26/2016 16:00	6.91			7.17			4.52		1.78			0.92	
12/26/2016 16:10	6.90			7.16	7:10	0.26	4.53		1.77				
12/26/2016 16:20	6.90			7.16			4.53		1.77				
12/26/2016 16:30	6.90			7.16			4.54		1.77			1.3	
12/26/2016 16:40	6.89			7.17			4.55		1.76	7:40	0.14		
12/26/2016 16:50	6.89			7.18			4.57		1.76				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/26/2016 17:00	6.89			7.19			4.58		1.76			1.8	
12/26/2016 17:10	6.89			7.19			4.58		1.76				
12/26/2016 17:20	6.88	8:20	0.22	7.20			4.58		1.76				
12/26/2016 17:30	6.88			7.21			4.59		1.76			2.42	
12/26/2016 17:40	6.88			7.21			4.59		1.77				
12/26/2016 17:50	6.88			7.21			4.60		1.77				
12/26/2016 18:00	6.88			7.22			4.60		1.77			3.18	
12/26/2016 18:10	6.88			7.24			4.61		1.77				
12/26/2016 18:20	6.88			7.24			4.61		1.77				
12/26/2016 18:30	6.88			7.25			4.62		1.78			4.1	
12/26/2016 18:40	6.89			7.26			4.61		1.79				
12/26/2016 18:50	6.89			7.27			4.61		1.79				
12/26/2016 19:00	6.89			7.29			4.63		1.79			5.12	
12/26/2016 19:10	6.89			7.31			4.65		1.79				
12/26/2016 19:20	6.90			7.33			4.67		1.80				
12/26/2016 19:30	6.90			7.36			4.69		1.80			6.14	
12/26/2016 19:40	6.90			7.38			4.70		1.80				
12/26/2016 19:50	6.91			7.40			4.72		1.81				
12/26/2016 20:00	6.91			7.42			4.74		1.81			7.06	
12/26/2016 20:10	6.91			7.43			4.74		1.82				
12/26/2016 20:20	6.91			7.45			4.76		1.82				
12/26/2016 20:30	6.92			7.47			4.76		1.83			7.77	
12/26/2016 20:40	6.92			7.48			4.77		1.83				
12/26/2016 20:50	6.93			7.49			4.77		1.83				
12/26/2016 21:00	6.93			7.51			4.78		1.83			8.25	
12/26/2016 21:10	6.94			7.53			4.79		1.84				
12/26/2016 21:20	6.94			7.55			4.80		1.84				
12/26/2016 21:30	6.95			7.57			4.81		1.85			8.48	high
12/26/2016 21:40	6.95			7.58			4.81		1.85				
12/26/2016 21:50	6.95			7.60			4.82		1.85				
12/26/2016 22:00	6.96			7.62			4.84		1.85			8.47	
12/26/2016 22:10	6.96			7.64			4.85		1.85				
12/26/2016 22:20	6.96			7.66			4.86		1.86	6:50	0.09		
12/26/2016 22:30	6.98			7.68			4.88		1.86			8.23	
12/26/2016 22:40	6.97			7.70			4.89		1.86				
12/26/2016 22:50	6.98			7.73			4.90		1.86				
12/26/2016 23:00	6.98			7.75			4.92		1.86			7.82	
12/26/2016 23:10	6.99			7.77			4.93		1.86				
12/26/2016 23:20	6.99			7.79			4.95		1.86				
12/26/2016 23:30	6.99			7.79			4.95		1.86			7.26	

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Tidal Study Data
Enbridge
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Weymouth Compressor Station,
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Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/26/2016 23:40	6.99			7.81			4.96		1.86				
12/26/2016 23:50	7.00			7.82			4.98		1.86				
12/27/2016 0:00	7.00			7.84			4.99		1.86			6.59	
12/27/2016 0:10	7.00			7.87			5.00		1.86				
12/27/2016 0:20	7.00			7.88			5.02		1.86				
12/27/2016 0:30	7.01	9:00	0.13	7.90			5.03		1.86			5.82	
12/27/2016 0:40	7.01			7.91			5.03		1.86				
12/27/2016 0:50	7.01			7.92			5.05		1.85				
12/27/2016 1:00	7.01			7.93			5.07		1.85			4.93	
12/27/2016 1:10	7.00			7.94			5.08		1.85				
12/27/2016 1:20	7.01			7.94			5.10		1.84				
12/27/2016 1:30	7.00			7.95			5.11		1.84			3.96	
12/27/2016 1:40	7.00			7.95			5.13		1.83				
12/27/2016 1:50	7.00			7.95			5.14		1.83				
12/27/2016 2:00	6.99			7.95			5.16		1.82			2.97	
12/27/2016 2:10	6.99			7.96			5.17		1.82				
12/27/2016 2:20	6.98			7.95			5.19		1.81				
12/27/2016 2:30	6.97			7.97			5.21		1.80			2.12	
12/27/2016 2:40	6.96			7.96			5.23		1.80				
12/27/2016 2:50	6.95			7.98			5.25		1.79				
12/27/2016 3:00	6.94			7.99	11:30	0.82	5.27		1.79			1.55	
12/27/2016 3:10	6.93			7.98			5.28		1.78				
12/27/2016 3:20	6.92			7.97			5.28		1.77				
12/27/2016 3:30	6.91			7.96			5.28		1.77			1.35	low
12/27/2016 3:40	6.91			7.95			5.27		1.77				
12/27/2016 3:50	6.89			7.95			5.29		1.76				
12/27/2016 4:00	6.89			7.96			5.30		1.76			1.5	
12/27/2016 4:10	6.88			7.95			5.31		1.75				
12/27/2016 4:20	6.88			7.96			5.32		1.75				
12/27/2016 4:30	6.88			7.94	7:00	0.04	5.32		1.75			1.91	
12/27/2016 4:40	6.87			7.95			5.32		1.75				
12/27/2016 4:50	6.87			7.95			5.32		1.75				
12/27/2016 5:00	6.87			7.96			5.34		1.74	7:30	0.11	2.47	
12/27/2016 5:10	6.87			7.97			5.35		1.74				
12/27/2016 5:20	6.87			7.97			5.34		1.75				
12/27/2016 5:30	6.87			7.98			5.35		1.75			3.13	
12/27/2016 5:40	6.87			8.00			5.37		1.75				
12/27/2016 5:50	6.87			8.02			5.39		1.75				
12/27/2016 6:00	6.86	8:30	0.14	8.05			5.41		1.75			3.89	
12/27/2016 6:10	6.87			8.06			5.42		1.75				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/27/2016 6:20	6.88			8.08			5.44		1.75				
12/27/2016 6:30	6.87			8.10			5.45		1.76			4.78	
12/27/2016 6:40	6.87			8.13			5.47		1.76				
12/27/2016 6:50	6.87			8.14			5.47		1.76				
12/27/2016 7:00	6.88			8.15			5.48		1.77			5.78	
12/27/2016 7:10	6.88			8.18			5.51		1.77				
12/27/2016 7:20	6.88			8.21			5.51		1.77				
12/27/2016 7:30	6.89			8.20			5.51		1.78			6.84	
12/27/2016 7:40	6.88			8.22			5.52		1.78				
12/27/2016 7:50	6.88			8.24			5.54		1.79				
12/27/2016 8:00	6.90			8.27			5.56		1.79			7.85	
12/27/2016 8:10	6.90			8.27			5.55		1.80				
12/27/2016 8:20	6.90			8.27			5.56		1.79				
12/27/2016 8:30	6.90			8.30			5.57		1.81			8.71	
12/27/2016 8:40	6.91			8.31			5.57		1.81				
12/27/2016 8:50	6.92			8.33			5.58		1.81				
12/27/2016 9:00	6.92			8.33			5.59		1.81			9.32	
12/27/2016 9:10	6.92			8.35			5.59		1.82				
12/27/2016 9:20	6.93			8.35			5.58		1.82				
12/27/2016 9:30	6.93			8.35			5.57		1.83			9.66	
12/27/2016 9:40	6.94			8.37			5.57		1.83				
12/27/2016 9:50	6.95			8.38			5.58		1.83				
12/27/2016 10:00	6.95			8.39			5.57		1.83			9.72	high
12/27/2016 10:10	6.94			8.39			5.58		1.84				
12/27/2016 10:20	6.96			8.41			5.58		1.84				
12/27/2016 10:30	6.96			8.42			5.59		1.84			9.52	
12/27/2016 10:40	6.96			8.43			5.60		1.85				
12/27/2016 10:50	6.97			8.42			5.59		1.84				
12/27/2016 11:00	6.97			8.44			5.59		1.85			9.08	
12/27/2016 11:10	6.97			8.44			5.59		1.86	7:40	0.11		
12/27/2016 11:20	6.98			8.44			5.59		1.85				
12/27/2016 11:30	6.99			8.46			5.59		1.86			8.46	
12/27/2016 11:40	6.99			8.46			5.60		1.86				
12/27/2016 11:50	6.99			8.47			5.60		1.86				
12/27/2016 12:00	6.99			8.47			5.60		1.86			7.69	
12/27/2016 12:10	6.99			8.45			5.58		1.86				
12/27/2016 12:20	6.99			8.47			5.59		1.86				
12/27/2016 12:30	7.00	9:00	0.14	8.48	9:00	0.53	5.60		1.85			6.81	
12/27/2016 12:40	7.00			8.48			5.60		1.85				
12/27/2016 12:50	7.00			8.47			5.60		1.85				

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Tidal Study Data
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Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/27/2016 13:00	6.99			8.45			5.59		1.84			5.82	
12/27/2016 13:10	6.99			8.43			5.60		1.84				
12/27/2016 13:20	6.99			8.42			5.60		1.83				
12/27/2016 13:30	6.98			8.41			5.60		1.82			4.72	
12/27/2016 13:40	6.97			8.39			5.60		1.82				
12/27/2016 13:50	6.96			8.38			5.61		1.81				
12/27/2016 14:00	6.96			8.37			5.61		1.80			3.55	
12/27/2016 14:10	6.94			8.35			5.62		1.80				
12/27/2016 14:20	6.93			8.34			5.62		1.78				
12/27/2016 14:30	6.91			8.32			5.62		1.78			2.41	
12/27/2016 14:40	6.90			8.31			5.63		1.77				
12/27/2016 14:50	6.89			8.30			5.64		1.76				
12/27/2016 15:00	6.88			8.27			5.63		1.76			1.44	
12/27/2016 15:10	6.86			8.25			5.63		1.75				
12/27/2016 15:20	6.85			8.22			5.62		1.75				
12/27/2016 15:30	6.84			8.20			5.62		1.74			0.78	
12/27/2016 15:40	6.83			8.18			5.61		1.73				
12/27/2016 15:50	6.82			8.16			5.61		1.73				
12/27/2016 16:00	6.82			8.15			5.60		1.72			0.51	low
12/27/2016 16:10	6.81			8.13			5.60		1.71				
12/27/2016 16:20	6.80			8.12			5.60		1.71				
12/27/2016 16:30	6.80			8.10			5.59		1.71			0.6	
12/27/2016 16:40	6.79			8.10			5.59		1.71				
12/27/2016 16:50	6.79			8.08			5.57		1.71				
12/27/2016 17:00	6.79			8.08			5.58		1.70	7:00	0.16	0.95	
12/27/2016 17:10	6.78	7:10	0.22	8.07			5.57		1.70				
12/27/2016 17:20	6.78			8.07			5.57		1.70				
12/27/2016 17:30	6.78			8.07			5.56		1.70			1.46	
12/27/2016 17:40	6.78			8.07			5.56		1.70				
12/27/2016 17:50	6.78			8.06			5.55		1.70				
12/27/2016 18:00	6.78			8.06			5.54		1.70			2.08	
12/27/2016 18:10	6.79			8.06			5.54		1.70				
12/27/2016 18:20	6.78			8.06			5.53		1.71				
12/27/2016 18:30	6.78			8.06			5.52		1.71			2.81	
12/27/2016 18:40	6.79			8.05	8:40	0.42	5.51		1.71				
12/27/2016 18:50	6.78			8.06			5.52		1.71				
12/27/2016 19:00	6.79			8.06			5.51		1.72			3.69	
12/27/2016 19:10	6.79			8.07			5.51		1.72				
12/27/2016 19:20	6.79			8.06			5.50		1.73				
12/27/2016 19:30	6.80			8.06			5.50		1.73			4.69	

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Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/27/2016 19:40	6.80			8.07			5.49		1.73				
12/27/2016 19:50	6.80			8.07			5.48		1.74				
12/27/2016 20:00	6.81			8.07			5.48		1.75			5.74	
12/27/2016 20:10	6.81			8.07			5.47		1.75				
12/27/2016 20:20	6.82			8.08			5.47		1.75				
12/27/2016 20:30	6.82			8.09			5.46		1.76			6.74	
12/27/2016 20:40	6.82			8.08			5.46		1.77				
12/27/2016 20:50	6.83			8.08			5.46		1.77				
12/27/2016 21:00	6.84			8.09			5.46		1.77			7.57	
12/27/2016 21:10	6.84			8.09			5.45		1.78				
12/27/2016 21:20	6.85			8.09			5.45		1.79				
12/27/2016 21:30	6.85			8.09			5.44		1.79			8.17	
12/27/2016 21:40	6.85			8.09			5.43		1.79				
12/27/2016 21:50	6.86			8.10			5.43		1.80				
12/27/2016 22:00	6.86			8.11			5.43		1.80			8.51	
12/27/2016 22:10	6.87			8.12			5.44		1.81				
12/27/2016 22:20	6.87			8.11			5.42		1.81				
12/27/2016 22:30	6.87			8.12			5.42		1.81			8.59	high
12/27/2016 22:40	6.88			8.12			5.42		1.82				
12/27/2016 22:50	6.89			8.12			5.42		1.82				
12/27/2016 23:00	6.89			8.14			5.42		1.82			8.42	
12/27/2016 23:10	6.89			8.13			5.40		1.82				
12/27/2016 23:20	6.90			8.14			5.40		1.82				
12/27/2016 23:30	6.91			8.13			5.39		1.82			8.04	
12/27/2016 23:40	6.91			8.14			5.38		1.83				
12/27/2016 23:50	6.92			8.15			5.38		1.83				
12/28/2016 0:00	6.92			8.16			5.38		1.83			7.5	
12/28/2016 0:10	6.92			8.16			5.38		1.83				
12/28/2016 0:20	6.93			8.17			5.38		1.83				
12/28/2016 0:30	6.93			8.19			5.38		1.83			6.84	
12/28/2016 0:40	6.93			8.19			5.38		1.84	8:40	0.14		
12/28/2016 0:50	6.94			8.21			5.39		1.84				
12/28/2016 1:00	6.94			8.21			5.40	9:00	1.83			6.09	
12/28/2016 1:10	6.94			8.22			5.39		1.84				
12/28/2016 1:20	6.94			8.22			5.38		1.84				
12/28/2016 1:30	6.95	9:30	0.17	8.23	9:30	0.17	5.40		1.84			5.25	
12/28/2016 1:40	6.95			8.22			5.40		1.84				
12/28/2016 1:50	6.95			8.22			5.40		1.84				
12/28/2016 2:00	6.95			8.22			5.39		1.83			4.32	
12/28/2016 2:10	6.95			8.21			5.39		1.84				

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Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/28/2016 2:20	6.95			8.20			5.39		1.83				
12/28/2016 2:30	6.95			8.20			5.39		1.82			3.34	
12/28/2016 2:40	6.95			8.18			5.39		1.82				
12/28/2016 2:50	6.95			8.17			5.39		1.82				
12/28/2016 3:00	6.94			8.16			5.39		1.81			2.42	
12/28/2016 3:10	6.94			8.15			5.40		1.81				
12/28/2016 3:20	6.94			8.14			5.40		1.80				
12/28/2016 3:30	6.93			8.13			5.40		1.80			1.7	
12/28/2016 3:40	6.92			8.11			5.40		1.79				
12/28/2016 3:50	6.92			8.10			5.40		1.79				
12/28/2016 4:00	6.91			8.09			5.40		1.79			1.32	low
12/28/2016 4:10	6.90			8.08			5.39		1.79				
12/28/2016 4:20	6.90			8.06			5.39		1.78				
12/28/2016 4:30	6.89			8.05			5.39		1.78			1.32	
12/28/2016 4:40	6.89			8.04			5.39		1.77	6:10	0.06		
12/28/2016 4:50	6.89			8.03			5.38		1.77				
12/28/2016 5:00	6.88			8.02			5.38		1.77			1.66	
12/28/2016 5:10	6.88			8.01			5.37		1.77				
12/28/2016 5:20	6.88			8.01			5.36		1.77				
12/28/2016 5:30	6.87	7:00	0.08	8.00	7:00	0.23	5.36		1.77			2.22	
12/28/2016 5:40	6.88			8.00			5.36		1.77				
12/28/2016 5:50	6.87			8.00			5.36		1.77				
12/28/2016 6:00	6.87			8.00			5.35		1.77			2.91	
12/28/2016 6:10	6.88			8.00			5.35		1.77				
12/28/2016 6:20	6.87			8.00			5.35		1.78				
12/28/2016 6:30	6.88			8.00			5.35		1.78			3.69	
12/28/2016 6:40	6.88			8.01			5.35		1.78				
12/28/2016 6:50	6.88			8.02			5.35		1.78				
12/28/2016 7:00	6.88			8.03			5.35		1.79			4.55	
12/28/2016 7:10	6.89			8.03			5.35		1.79				
12/28/2016 7:20	6.90			8.03			5.35		1.80				
12/28/2016 7:30	6.90			8.04			5.35		1.80			5.52	
12/28/2016 7:40	6.90			8.04			5.34		1.81				
12/28/2016 7:50	6.90			8.04			5.33		1.81				
12/28/2016 8:00	6.91			8.04			5.33		1.82			6.58	
12/28/2016 8:10	6.92			8.05			5.33		1.82				
12/28/2016 8:20	6.92			8.06			5.31		1.83				
12/28/2016 8:30	6.92			8.06			5.31		1.83			7.62	
12/28/2016 8:40	6.93			8.07			5.31		1.84				
12/28/2016 8:50	6.93			8.08			5.31		1.84				

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Weymouth Compressor Station,
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Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/28/2016 9:00	6.94			8.07			5.30		1.85			8.56	
12/28/2016 9:10	6.94			8.08			5.31		1.85				
12/28/2016 9:20	6.94			8.09			5.31		1.85				
12/28/2016 9:30	6.95			8.09			5.30		1.86			9.28	
12/28/2016 9:40	6.96			8.10			5.30		1.86				
12/28/2016 9:50	6.96			8.09			5.30		1.87				
12/28/2016 10:00	6.96			8.11			5.30		1.87			9.73	
12/28/2016 10:10	6.97			8.11			5.30		1.87				
12/28/2016 10:20	6.96			8.11			5.30		1.87				
12/28/2016 10:30	6.97			8.12			5.29		1.88			9.88	high
12/28/2016 10:40	6.97			8.12			5.29		1.87				
12/28/2016 10:50	6.98			8.12			5.29		1.88				
12/28/2016 11:00	6.98			8.13			5.29		1.88			9.74	
12/28/2016 11:10	6.98			8.12			5.29		1.88				
12/28/2016 11:20	6.99			8.13			5.29		1.88				
12/28/2016 11:30	6.99			8.13			5.28		1.88			9.34	
12/28/2016 11:40	6.99			8.13			5.28		1.88				
12/28/2016 11:50	7.00			8.14	7:20	0.14	5.27		1.89	7:20	0.11		
12/28/2016 12:00	7.00			8.14			5.27		1.89			8.72	
12/28/2016 12:10	7.00			8.14			5.27		1.89				
12/28/2016 12:20	7.01	7:50	0.13	8.13			5.26		1.89				
12/28/2016 12:30	7.00			8.14			5.26		1.89			7.94	
12/28/2016 12:40	7.00			8.13			5.26		1.88				
12/28/2016 12:50	7.00			8.13			5.25		1.89				
12/28/2016 13:00	7.01			8.12			5.25		1.88			7.05	
12/28/2016 13:10	7.00			8.12			5.25		1.88				
12/28/2016 13:20	7.01			8.10			5.25		1.87				
12/28/2016 13:30	7.00			8.09			5.25		1.87			6.06	
12/28/2016 13:40	7.00			8.07			5.24		1.86				
12/28/2016 13:50	6.99			8.06			5.25		1.85				
12/28/2016 14:00	6.98			8.04			5.24		1.84			5	
12/28/2016 14:10	6.97			8.02			5.24		1.83				
12/28/2016 14:20	6.96			7.99			5.24		1.83				
12/28/2016 14:30	6.94			7.97			5.24		1.81			3.86	
12/28/2016 14:40	6.92			7.95			5.24		1.80				
12/28/2016 14:50	6.90			7.91			5.24		1.79				
12/28/2016 15:00	6.89			7.89			5.23		1.79			2.69	
12/28/2016 15:10	6.88			7.85			5.23		1.77				
12/28/2016 15:20	6.86			7.82			5.22		1.76				
12/28/2016 15:30	6.84			7.80			5.21		1.76			1.63	

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Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/28/2016 15:40	6.82			7.76			5.21		1.75				
12/28/2016 15:50	6.81			7.73			5.20		1.74				
12/28/2016 16:00	6.79			7.70			5.19		1.73			0.81	
12/28/2016 16:10	6.77			7.67			5.18		1.72				
12/28/2016 16:20	6.75			7.64			5.18		1.71				
12/28/2016 16:30	6.74			7.61			5.17		1.71			0.36	
12/28/2016 16:40	6.73			7.58			5.16		1.70				
12/28/2016 16:50	6.73			7.56			5.16		1.69				
12/28/2016 17:00	6.72			7.55			5.15		1.69			0.32	low
12/28/2016 17:10	6.71			7.53			5.14		1.68				
12/28/2016 17:20	6.71			7.52			5.13		1.68				
12/28/2016 17:30	6.70			7.50			5.13		1.67			0.61	
12/28/2016 17:40	6.70			7.49			5.12		1.67				
12/28/2016 17:50	6.70			7.49			5.10		1.67				
12/28/2016 18:00	6.69	7:30	0.32	7.47			5.10		1.66	7:30	0.22	1.14	
12/28/2016 18:10	6.69			7.47			5.10		1.66				
12/28/2016 18:20	6.69			7.46	7:50	0.67	5.09		1.66				
12/28/2016 18:30	6.69			7.47			5.08		1.66			1.79	
12/28/2016 18:40	6.69			7.47			5.08		1.66				
12/28/2016 18:50	6.69			7.46			5.07		1.66				
12/28/2016 19:00	6.69			7.46			5.06		1.66			2.54	
12/28/2016 19:10	6.70			7.47			5.06		1.66				
12/28/2016 19:20	6.70			7.48			5.06		1.66				
12/28/2016 19:30	6.70			7.49			5.06		1.67			3.4	
12/28/2016 19:40	6.70			7.49			5.05		1.67				
12/28/2016 19:50	6.71			7.50			5.04		1.67				
12/28/2016 20:00	6.70			7.50			5.04		1.68			4.38	
12/28/2016 20:10	6.71			7.51			5.04		1.68				
12/28/2016 20:20	6.71			7.51			5.04		1.68				
12/28/2016 20:30	6.72			7.52			5.03		1.69			5.43	
12/28/2016 20:40	6.72			7.52			5.03		1.69				
12/28/2016 20:50	6.73			7.53			5.03		1.70				
12/28/2016 21:00	6.73			7.53			5.02		1.70			6.48	
12/28/2016 21:10	6.74			7.55			5.03		1.70				
12/28/2016 21:20	6.74			7.55			5.03		1.71				
12/28/2016 21:30	6.74			7.56			5.02		1.71			7.41	
12/28/2016 21:40	6.75			7.57			5.03		1.72				
12/28/2016 21:50	6.75			7.57			5.02		1.72				
12/28/2016 22:00	6.76			7.57			5.01		1.72			8.11	
12/28/2016 22:10	6.76			7.57			5.01		1.73				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/28/2016 22:20	6.76			7.57			5.01		1.73				
12/28/2016 22:30	6.77			7.57			5.01		1.73			8.55	
12/28/2016 22:40	6.78			7.59			5.01		1.73				
12/28/2016 22:50	6.78			7.60			5.01		1.74				
12/28/2016 23:00	6.79			7.61			5.01		1.74			8.71	high
12/28/2016 23:10	6.79			7.61			5.01		1.74				
12/28/2016 23:20	6.80			7.62			5.01		1.74				
12/28/2016 23:30	6.80			7.63			5.01		1.75			8.6	
12/28/2016 23:40	6.81			7.64			5.02		1.75				
12/28/2016 23:50	6.81			7.65			5.01		1.75				
12/29/2016 0:00	6.81			7.65			5.00		1.76	7:00	0.09	8.25	
12/29/2016 0:10	6.82			7.66			5.01		1.76				
12/29/2016 0:20	6.82			7.67			5.01		1.76				
12/29/2016 0:30	6.83			7.68			5.00		1.76			7.72	
12/29/2016 0:40	6.83			7.69			5.00		1.76				
12/29/2016 0:50	6.83			7.69			5.01		1.76				
12/29/2016 1:00	6.83			7.70			5.00		1.76			7.04	
12/29/2016 1:10	6.84			7.71			5.01		1.76				
12/29/2016 1:20	6.84			7.72	8:20	0.25	5.01		1.76				
12/29/2016 1:30	6.85	8:30	0.15	7.72			5.02		1.76			6.28	
12/29/2016 1:40	6.85			7.72			5.01		1.76				
12/29/2016 1:50	6.85			7.73			5.01		1.76				
12/29/2016 2:00	6.85			7.72			5.01		1.76			5.45	
12/29/2016 2:10	6.85			7.72			5.01		1.75				
12/29/2016 2:20	6.85			7.71			5.01		1.75				
12/29/2016 2:30	6.85			7.70			5.01		1.74			4.56	
12/29/2016 2:40	6.84			7.68			5.01		1.74				
12/29/2016 2:50	6.83			7.67			5.00		1.73				
12/29/2016 3:00	6.83			7.65			5.00		1.73			3.61	
12/29/2016 3:10	6.82			7.63			4.99		1.72				
12/29/2016 3:20	6.81			7.62			5.00		1.72				
12/29/2016 3:30	6.80			7.60			5.00		1.71			2.67	
12/29/2016 3:40	6.79			7.59			4.99		1.70				
12/29/2016 3:50	6.78			7.58			5.00		1.70				
12/29/2016 4:00	6.77			7.55			5.00		1.69			1.86	
12/29/2016 4:10	6.75			7.54			4.99		1.69				
12/29/2016 4:20	6.74			7.52			4.99		1.68				
12/29/2016 4:30	6.73			7.52			5.00		1.67			1.32	
12/29/2016 4:40	6.72			7.49			4.98		1.67				
12/29/2016 4:50	6.72			7.48			4.98		1.66				

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide
12/29/2016 5:00	6.71			7.47			4.98		1.66			1.16	low
12/29/2016 5:10	6.71			7.46			4.97		1.66				
12/29/2016 5:20	6.71			7.45			4.97		1.65				
12/29/2016 5:30	6.70	6:30	0.14	7.44	6:30	0.28	4.97		1.65			1.39	
12/29/2016 5:40	6.70			7.44			4.97		1.65				
12/29/2016 5:50	6.70			7.44			4.97		1.65				
12/29/2016 6:00	6.70			7.45			4.97		1.64	7:00	0.11	1.94	
12/29/2016 6:10	6.70			7.45			4.97		1.64				
12/29/2016 6:20	6.70			7.45			4.97		1.64				
12/29/2016 6:30	6.70			7.44			4.97		1.64			2.66	
12/29/2016 6:40	6.70			7.45			4.97		1.64				
12/29/2016 6:50	6.70			7.46			4.98		1.64				
12/29/2016 7:00	6.70			7.48			4.98		1.64			3.49	
12/29/2016 7:10	6.70			7.49			4.98		1.65				
12/29/2016 7:20	6.71			7.49			4.98		1.65				
12/29/2016 7:30	6.71			7.50			4.99		1.65			4.37	
12/29/2016 7:40	6.72			7.52			4.99		1.65				
12/29/2016 7:50	6.72			7.53			5.00		1.66				
12/29/2016 8:00	6.73			7.55			5.00		1.66			5.33	
12/29/2016 8:10	6.72			7.57			5.01		1.66				
12/29/2016 8:20	6.72			7.58			5.02		1.67				
12/29/2016 8:30	6.73			7.59			5.02		1.67			6.36	
12/29/2016 8:40	6.74			7.61			5.03		1.68				
12/29/2016 8:50	6.74			7.62			5.04		1.68				
12/29/2016 9:00	6.74			7.64			5.04		1.68			7.43	
12/29/2016 9:10	6.75			7.66			5.05		1.68				
12/29/2016 9:20	6.75			7.68			5.07		1.69				
12/29/2016 9:30	6.76			7.69			5.07		1.69			8.42	
12/29/2016 9:40	6.76			7.70			5.07		1.70				
12/29/2016 9:50	6.77			7.70			5.07		1.70				
12/29/2016 10:00	6.77			7.71			5.07		1.71			9.23	
12/29/2016 10:10	6.78			7.72			5.07		1.71				
12/29/2016 10:20	6.78			7.72			5.07		1.71				
12/29/2016 10:30	6.79			7.75			5.09		1.72			9.77	
12/29/2016 10:40	6.79			7.76			5.09		1.72				
12/29/2016 10:50	6.79			7.77			5.10		1.72				
12/29/2016 11:00	6.80			7.79			5.10		1.72			10.01	
Average	---	7:57	0.14	---	7:57	0.31	---	minor tidal influence	---	7:18	0.11	---	---
Minimum	---	6:00	0.02	---	6:00	0.04	---		---	6:00	0.03	---	---
Maximum	---	9:40	0.32	---	11:30	0.82	---		---	9:20	0.22	---	---

Appendix A-3
Tidal Study Data
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station,
6 Bridge Street, Weymouth, Massachusetts

Date/Time	MW-202 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-205 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	MW-206 Depth to Water (ft)	Lag Time (hr:min)	MW-417 Depth to Water (ft)	Lag Time (hr:min)	Delta (ft)	Fore River Bridge Stage (ft-MLLW)	Observed High and Low Tide

Notes:
Fore River Bridge stage data from NOAA Station 344788, relative to mean low low water (MLLW) datum.
Highlighted cells used to identify first occurrence of low and high depth to waterrelative to high tide and low tide, respectively, measured at Fore River Bridge (NOAA Station 344788).

Appendix A-4
Permanent Solution Statement Report Photograph Log: MW-201 Skimming Test

Photo 1: MW-201 – NAPL coating probe and pad, 4/17/17.

Photo 2: MW-201 – NAPL and water discharge, 4/17/17.

Photo 3: MW-201 – NAPL in tubing and floating in pail, 4/17/17.

Photo 4: MW-201 – NAPL adhered to inside of pail, 4/17/17.

Photo 5: MW-201 – NAPL adhered to side of pail held vertically, 4/17/17.

Photo 6: MW-201 – NAPL plugging ½-inch inside diameter peristaltic tubing on 4/17/17.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
140143.0000 .4903	[L. Hopp, C. Race]	1 of 1	Enbridge	[Weymouth CS, Bridge Street, Weymouth, MA]	TRC

Appendix A-4
IRA Completion Report Photograph Log: MW-414 Manual Skimming Test

Photo 1: MW-414 – skimming test setup, 4/17/17.

Photo 2: MW-414 – NAPL pumping, 4/17/17.

Photo 3: MW-414 – NAPL and water discharge, 4/17/17.

Photo 4: MW-414 – NAPL coating probe, 4/17/17.

Photo 5: MW-414 – water and NAPL on probe tip, 4/18/17.

Photo 6: MW-414 – NAPL coating tape, 4/18/17.

Appendix A-4
IRA Completion Report Photograph Log: MW-414 Manual Skimming Test

Photo 7: MW-414 – NAPL being removed from tape, 4/18/17.

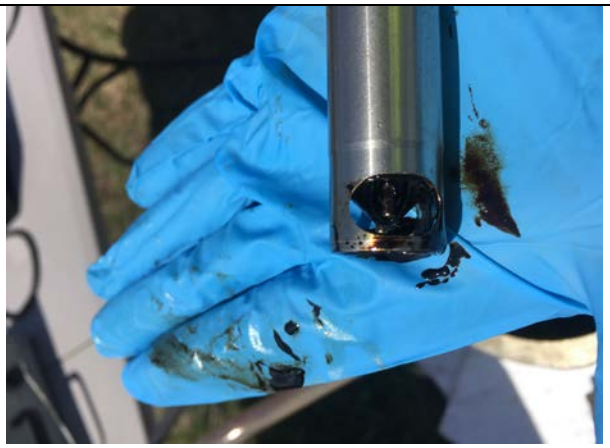


Photo 8: MW-414 – NAPL and water on probe tip, 4/19/17.

Photo 9: MW-414 – water and NAPL globs – top view, 4/19/17.

Photo 10: MW-414 – water and NAPL globs – side view, 4/19/17.

Photo 11: MW-414 – NAPL coating 2.5 quart container-side, 4/19/17.

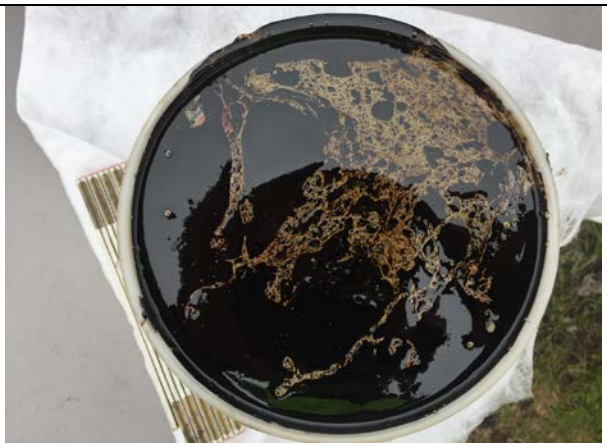


Photo 12: MW-414 – NAPL and water discharge top view, 4/25/17.

Appendix A-4
IRA Completion Report Photograph Log: MW-414 Manual Skimming Test

Photo 13: MW-414 – NAPL and water side view, 4/25/17.

Photo 14: MW-414 – NAPL and water discharge side, 5/1/17.

Photo 15: MW-414 – NAPL and water discharge into left container, and partial decant to right container, 5/1/17.

Photo 16: MW-414 – NAPL and water decanted top, 5/1/17.

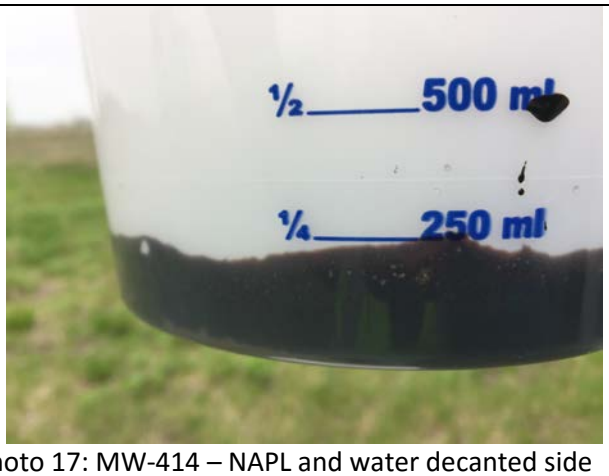


Photo 17: MW-414 – NAPL and water decanted side close-up, 5/1/17.

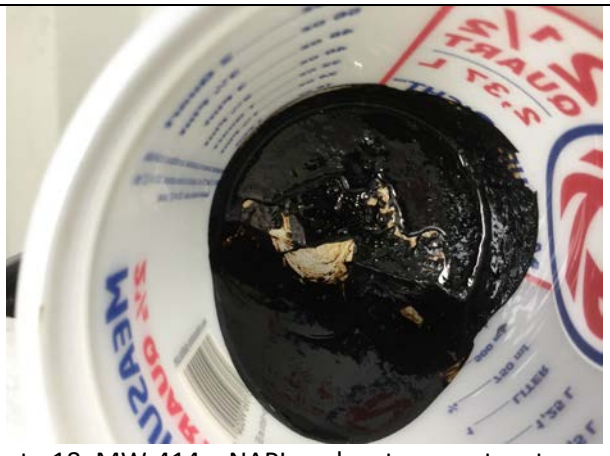


Photo 18: MW-414 – NAPL and water, most water decanted off, 5/1/17.

Well: MW-414

Site: 6 Bridge St., Weymouth, MA

Skimming Recovery Field Form

Site:	6 Bridge St., Weymouth, MA	**Project #:**	140143.0000.4903
Monitoring Well:	MW-414	**Field Staff:**	C.Race, L. Hopp, A. Cornell
Evacuation Method:	Peristaltic pump	**Weather:**	

Well Information		Pump and Liquid Volume Measurement Information	
Casing Diameter (Inches):	4"	**Pump Type:**	Peristaltic pump
Total Well Depth (feet):	23' bgs		
Depth to Top of Screen (feet)	8 bgs	**Volume Measurement Method:**	Graduated container
Screen Length (feet):	15'		

Pumping Status	Date	Time Hour:Min	LNAPL Volume Recovered (milliliters)	Water Volume Recovered (milliliters)	DTP (feet)	DTW (feet)	Comments
Off/Static	4/17/17	0747	—	—	14.25	15.64	PreTest
Pump ~~On~~ OFF		0858	—	—	14.24	15.65	" "
Pump ~~Off~~ ON		0910	—	—	—	—	MIXTURE NAPL + H_2O
		0914	—	—	—	—	NAPL
		0922	—	—	—	-	WATER AND NAPL GLOBULES
		0927	—	—	—	—	" " " "
		0929	—	—	—	—	WATER
		0930	—	—	—	—	lift line, pumping air
Pump off		0932	3000	8000	—	—	
		0944	—	—	14.35	15.96	recheck DTW
		0946	—	—	—	1600	" "
		0951	—	—	14.35	14.43	0.08' NAPL THICKNESS
		1027	—	—	14.35	14.78	recheck DTW
		10:35	—	—	—	14.53	0.18' NAPL THICKNESS
		12:21	—	—	14.41	1500	recheck DTW
		12:23	—	—	—	15.10	" "
		12:25	—	—	—	14.42	" "
		12:26	—	—	—	14.50	0.08' NAPL THICKNESS
		13:40	—	—	14.44	—	
		13:44	—	—	—	14.65	recheck DTW
		13:47	—	—	—	14.62	" "
		13:48	—	—	—	14.87	" "
		13:49	—	—	—	14.91	" "
Pump ON		13:58	—	—	—	—	
Pump off		14:04	750	3,250			Some product + water from
—		—	—	—	—	—	previous pumping at 0910.
Pump off		14:12	—	—	14.44	—	
		14:14	—	—	—	14.41	recheck DTW.
		14:16	—	—	—	14.42	
	4/18/17	0722	—	—	14.39	—	
		09:24	—	—	—	15.51	recheck DTW
		0725	—	—	—	15.52	" "
		0726	—	—	—	15.19	" "
		0727	—	—	—	14.40	" "
		0728	—	—	—	14.70	" "

Well: MW-414

Site: 6 Bridge St., Weymouth, MA

Skimming Recovery Field Form

Site:	6 Bridge St., Weymouth, MA	**Project #:**	140143.0000.4903
Monitoring Well:	MW-414	**Field Staff:**	C.Race, L. Hopp, A. Cornell
Evacuation Method:	Peristaltic pump	**Weather:**	

Well Information		Pump and Liquid Volume Measurement Information	
Casing Diameter (Inches):	4"	**Pump Type:**	Peristaltic pump
Total Well Depth (feet):	53' bgs		
Depth to Top of Screen (feet)	8' bgs	**Volume Measurement Method:**	Graduated container
Screen Length (feet):	15'		

Pumping Status	Date	Time Hour:Min	LNAPL Volume Recovered (milliliters)	Water Volume Recovered (milliliters)	DTP (feet)	DTW (feet)	Comments
Off/~~Static~~	4/18/17	07:30	—	—	—	14.68	0.29' NAPL thickness
Pump On		07:40	—	—	—	—	
Pump Off		07:53	118	11007	—	—	
		07:55	—	—	—	14.47	
		07:58	—	—	14:39	—	
		07:59	—	—	—	14.88	recheck DTW
		08:00	—	—	—	14.32	" DTW
		08:01	—	—	—	14.41	" "
		08:02	—	—	—	14.38	reproduced. 0.01' thick
		10:44	—	—	14.43	15.24	recheck DTW
		—	—	—	—	14.38	" "
		10:53	—	—	—	14.35	0.68' NAPL thickness.
		12:15	—	—	14.46	—	
		12:16	—	—	—	14.75	recheck DTW
		12:17	—	—	—	14.45	" "
		12:18	—	—	—	14.45	reproduced.
		13:21	—	—	14.52	14.47	
		14:16	—	—	14.52	14.52	product on tape
	4/19/17	07:28	—	—	14.53	—	
		07:30	—	—	—	14.55	product on probe
		10:22	—	—	14.52	—	—
		10:25	—	—	14.53	14.53	product on probe
		11:55			14.53	—	
		12:20			14.51	14.53	
		13:03			14.57	14.57	
Pump ON		13:12	59	2129			
Pump off.		13:14			14.57	14.57	
" "	4/25/17	07:17	—	—	14.42	14.44	
Pump ON		07:30	—	—	—	—	
Pump off		07:32	118	2366	14.45	14.45	
		10:07	—	—	14.52	—	
		10:09	—	—	—	14.55	recheck DTW
		10:11	—	—	—	14.55	reproduced
		10:20	—	—	14.50	—	
	5/1/17	09:20	—	—	13.73	13.94	recheck DTW

Well: MW-414

Site: 6 Bridge St., Weymouth, MA

Skimming Recovery Field Form

Site:	6 Bridge St., Weymouth, MA	**Project #:**	140143.0000.4903
Monitoring Well:	MW-414	**Field Staff:**	C.Race, L. Hopp, ~~A. Cornell~~ Cm
Evacuation Method:	Peristaltic pump	**Weather:**	

Well Information		Pump and Liquid Volume Measurement Information	
Casing Diameter (inches):	4"	**Pump Type:**	Peristaltic pump
Total Well Depth (feet):	33' bgs		
Depth to Top of Screen (feet)	8' bgs	**Volume Measurement Method:**	Graduated container
Screen Length (feet):	15'		

Pumping Status	Date	Time Hour:Min	LNAPL Volume Recovered (milliliters)	Water Volume Recovered (milliliters)	DTP (feet)	DTW (feet)	Comments
Off/~~Static~~	5/1/17	07:30	—	—	—	13.74	recheck DTP & DTW
Pump ~~On~~ OFF		07:36	—	—	13.74	13.74	product on tape + probe
Pump ~~Off~~ ON		07:50	—	—	—	—	
" "		07:51	—	—	—	—	Water discharge w/ NAPL blobs
Pump off		07:52	—	—	—	—	same, then water
" "		08:00	148	1750	13.74	13.74	Stop skimming test.

Appendix A-4
IRA Completion Report: Sock Inspection Photograph Log

Photo 1: MW-201 – sock removed 1 day after installation, 4/19/17.

Photo 2: MW-201 – sock removed 6 days after installation, 4/25/17.

Photo 3: MW-201 – sock removed 6 days after installation, 5/1/17.

Photo 4: MW-406 –sock removed 1 day after installation, 4/19/17.

Photo 5: MW-406 – sock removed 6 days after installation, 4/25/17.

Photo 6: MW-406 – sock removed 6 days after installation, 5/1/17.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
140143.0000 .4903	[L. Hopp, C. Race]	1 of 2	Enbridge	[Weymouth CS, Bridge Street, Weymouth, MA]	TRC

Appendix A-4
IRA Completion Report: Sock Inspection Photograph Log

Photo 7: MW-407 – sock removed 1 day after installation, 4/19/17.

Photo 8: MW-407 – sock removed 6 days after installation, 4/25/17.

Photo 9: MW-407 – sock removed 6 days after installation, 5/1/17.

Photo 10: MW-410 – sock removed 1 day after installation 4/19/17.

Photo 11: MW-410 – sock removed 6 days after installation, 4/25/17.

Photo 12: MW-410 – sock removed 6 days after installation, 5/1/17.

APPENDIX B

LABORATORY ANALYTICAL REPORTS

LABORATORY ANALYTICAL REPORTS ARE INCLUDED IN THE PERMANENT SOLUTION WITH CONDITIONS STATEMENT REPORT AS APPENDIX B

APPENDIX C

HYDRAULIC CONDUCTIVITY AND LNAPL TRANSMISSIVITY CALCULATIONS

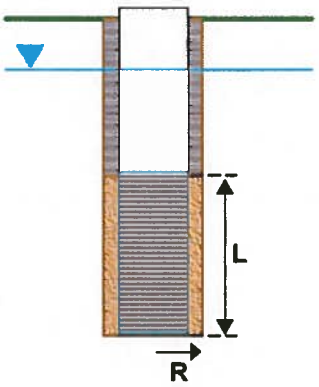
MW-202
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	206.35	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.36	L/min
Steady state drawdown (cm)	H=	0.91	cm
* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).	Computed Values		
	K=	1.47E-02	cm/s
	K=	4.18E+01	ft/day

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1+\left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1+\left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-203
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

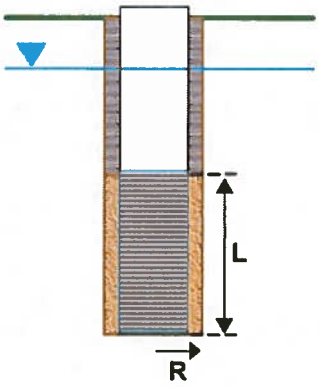
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	173.13	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.27	L/min
Steady state drawdown (cm)	H=	2.13	cm
	Computed Values		
	K=	5.29E-03	cm/s
	K=	1.50E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1+\left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1+\left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

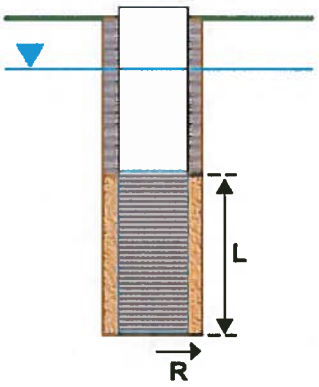
MW-204
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	204.83	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.29	L/min
Steady state drawdown (cm)	H=	1.22	cm
* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).	Computed Values		
	K=	8.89E-03	cm/s
	K=	2.52E+01	ft/day

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-205
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

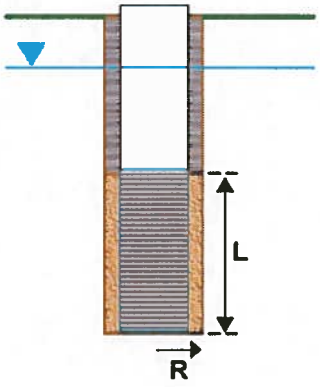
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	152.40	cm
Intake (hole) diameter (cm)	D =	22.860	cm
Steady state discharge (L/min)	Q=	0.5	L/min
Steady state drawdown (cm)	H=	0.61	cm
	Computed Values		
	K=	3.70E-02	cm/s
	K=	1.05E+02	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

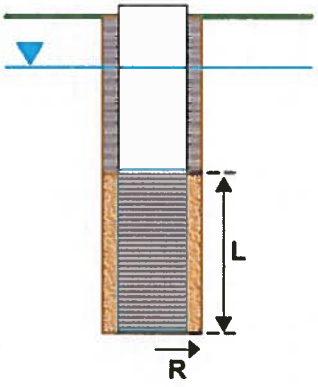
MW-206
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	146.91	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.35	L/min
Steady state drawdown (cm)	H=	0.61	cm
* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).	Computed Values		
	K=	2.65E-02	cm/s
	K=	7.52E+01	ft/day

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-400
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

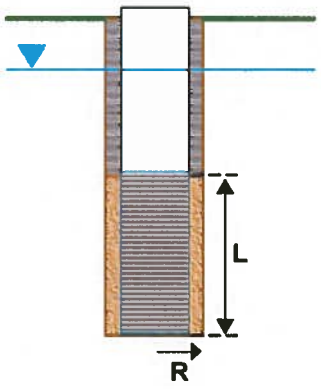
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	356.31	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.22	L/min
Steady state drawdown (cm)	H=	1.22	cm
	Computed Values		
	K=	5.41E-03	cm/s
	K=	1.53E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-401
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

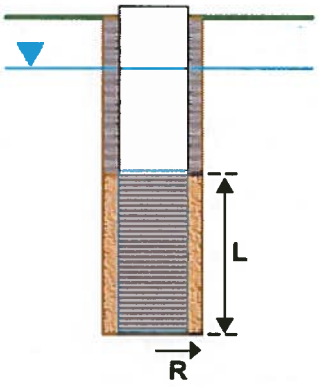
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	250.55	cm
Intake (hole) diameter (cm)	D* =	12.700	cm
Steady state discharge (L/min)	Q=	0.15	L/min
Steady state drawdown (cm)	H=	1.22	cm
	Computed Values		
	K=	4.79E-03	cm/s
	K=	1.36E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single O/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-402
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

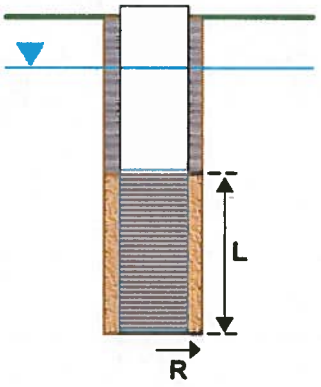
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	244.14	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.3	L/min
Steady state drawdown (cm)	H=	1.22	cm
	Computed Values		
	K=	9.75E-03	cm/s
	K=	2.76E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-403
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

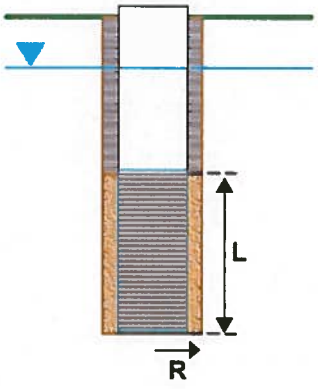
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	284.99	cm
Intake (hole) diameter (cm)	D* =	12.700	cm
Steady state discharge (L/min)	Q=	0.27	L/min
Steady state drawdown (cm)	H=	0.61	cm
	Computed Values		
	K=	1.57E-02	cm/s
	K=	4.44E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-404
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

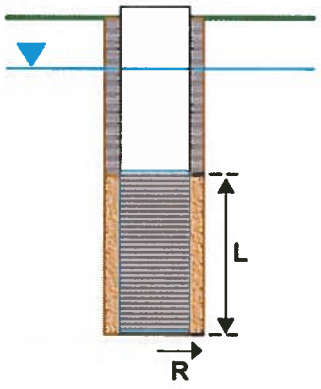
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	230.12	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.375	L/min
Steady state drawdown (cm)	H=	0.91	cm
	Computed Values		
	K=	1.43E-02	cm/s
	K=	4.05E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-405
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

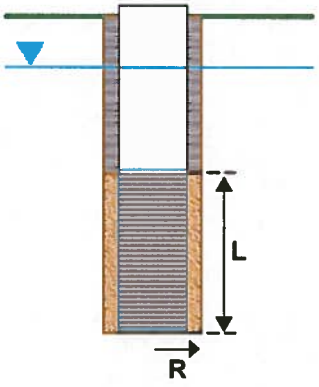
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	218.54	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.375	L/min
Steady state drawdown (cm)	H=	0.61	cm
	Computed Values		
	K=	2.64E-02	cm/s
	K=	7.49E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-406
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

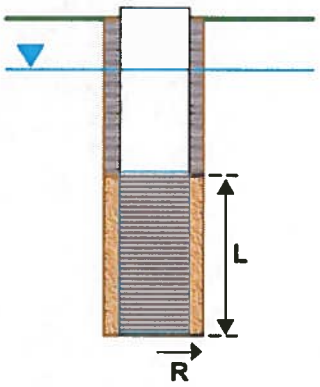
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	279.20	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.32	L/min
Steady state drawdown (cm)	H=	1.52	cm
	Computed Values		
	K=	7.57E-03	cm/s
	K=	2.15E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-408
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

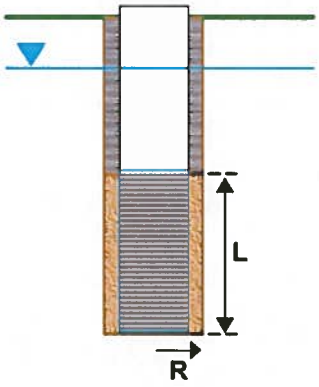
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	293.83	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.3	L/min
Steady state drawdown (cm)	H=	0.91	cm
	Computed Values		
	K=	1.14E-02	cm/s
	K=	3.24E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single O/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-409
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

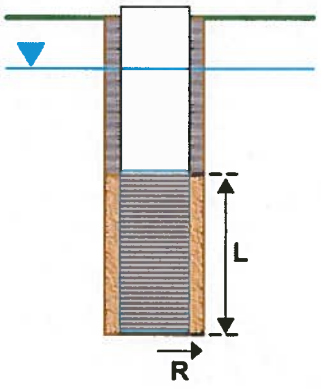
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	302.36	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.27	L/min
Steady state drawdown (cm)	H=	3.05	cm
	Computed Values		
	K=	3.00E-03	cm/s
	K=	8.51E+00	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-411
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

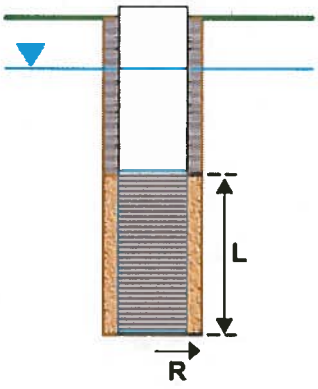
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	309.07	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.4	L/min
Steady state drawdown (cm)	H=	0.61	cm
	Computed Values		
	K=	2.19E-02	cm/s
	K=	6.20E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-412
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

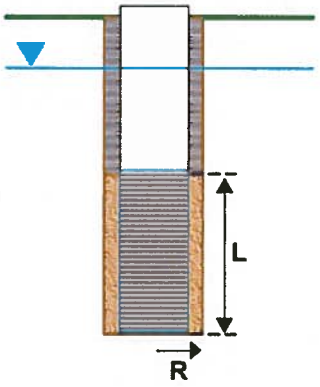
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	293.52	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.2	L/min
Steady state drawdown (cm)	H=	1.52	cm
	Computed Values		
	K=	3.86E-03	cm/s
	K=	1.09E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-413
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

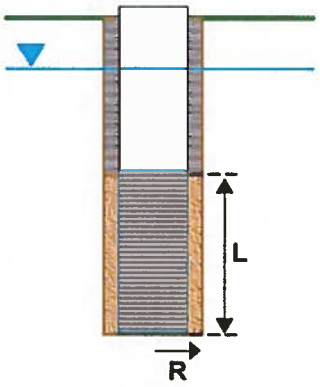
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	283.16	cm
Intake (hole) diameter (cm)	D=	22.860	cm
Steady state discharge (L/min)	Q=	0.33	L/min
Steady state drawdown (cm)	H=	1.22	cm
	Computed Values		
	K=	8.14E-03	cm/s
	K=	2.31E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

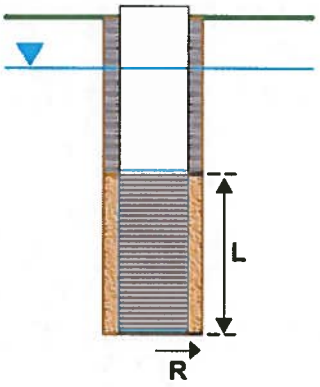
MW-415
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	233.17	cm
Intake (hole) diameter (cm)	D=	12.700	cm
Steady state discharge (L/min)	Q=	0.33	L/min
Steady state drawdown (cm)	H=	1.22	cm
* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).	Computed Values		
	K=	1.11E-02	cm/s
	K=	3.14E+01	ft/day

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

MW-416
Low Flow Kh Calculation Sheet
Spectra Energy Partners
Atlantic Bridge Project
Weymouth Compressor Station,
Weymouth, Massachusetts

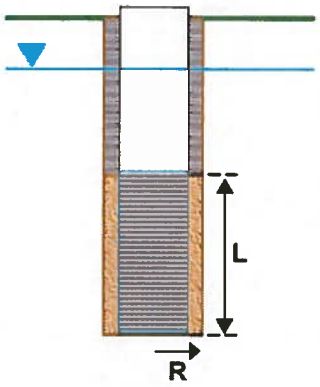
Ellipsoidal Flow Steady State Model
Single Pair of Discharge and Drawdown

Intake (screen) length (cm)	L=	356.01	cm
Intake (hole) diameter (cm)	D* =	12.700	cm
Steady state discharge (L/min)	Q=	0.24	L/min
Steady state drawdown (cm)	H=	1.52	cm
	Computed Values		
	K=	4.74E-03	cm/s
	K=	1.34E+01	ft/day

* This workbook can be used with the half ellipsoidal model by subsitituting the intake hole radius (R) instead of the intake hole diameter (D).

Formula

$$Q = \frac{2\pi LKH}{2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}$$



Single Q/H

$$K = \frac{Q * 2.303 \log\left[\frac{L}{D} + \sqrt{1 + \left(\frac{L}{D}\right)^2}\right]}{2\pi LH}$$

Model based on Hvorslev (1951)

TRC

Groundwater Field Data Record

Project: Spectra | **Project No.:** 140143 | **Date/Time:** 1/4/17 | **Sheet** 1 **of** 1

TRC Personnel: Kolleen Shea | **Well ID:** MW-201

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: ______

Flow-thru Cell Volume: ______

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground) ______ ft.

Riser Stick-up (from ground) ______ ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL [X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [X] top of riser [ ] top of casing [ ] ______ [ ] measured [ ] historical

Water Depth — ft.

Well Volume ______

LNAPL/DNAPL Depth = 13.64

NAPL Thickness = ______

Depth of pump intake: 18 ft

Static water level after pump put into well: [illegible]

Initial purge Rate/ Water Level (100-400 ml/min): 300 ml/min

Adjusted purge Rates/time/WL(record changes):

Flow rate at time of sampling: 300 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0930	0935	0940	0945	0950	0955	1000	1005	1010
Temp. (°C)	P	10.44	11.83	12.02	12.03	12.02	12.12	12.10	12.08
Conduct. (µmhos/cm)		36823	36418	36462	36463	36462	36502	36536	36564
DO (mg/L)	U	3.50	2.21	2.23	2.24	2.16	1.93	1.85	1.85
pH (su)	R	[illegible]	[illegible]	6.27	6.27	6.20	6.25	6.25	6.25
ORP (millivolts)	G	-44.0	-56.9	-64.7	-66.5	-67.1	-69.5	-71.4	-71.5
Turbidity (NTU)	E	13.0	2.90	3.19	2.09	2.05	1.06	1.53	2.06
Flow (ml/min)		300	300	300	300	300	300	300	300
Depth To Water (ft)	13.64	—	—	—	—	—	—	—	—
Cumulative Purge Vol. (gal or L)									

Time	1015	1020	1025	1025		
Temp. (°C)	12.17	12.11	12.10	S		
Conduct. (µmhos/cm)	36586	36650	36654	A		
DO (mg/L)	1.80	1.75	1.78	M		
pH (Std. Units)	6.25	6.25	6.25	P		
Eh/ORP (millivolts)	-72.0	-73.0	-73.5	L		
Turbidity (NTU)	2.03	1.41	1.09	E		
Flow (ml/min)	300	300	300			
Depth To Water (ft)	—	—	—			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: final DTP: 13.89 ft
dump ~ 4 gallons water in labeled drum

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L A	1025	none	
VPH	N	HCl	3	40mL A	1025	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Shea

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	143140	1/4/17	

TRC Personnel: Kelleenby

Well ID: MW-202

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER ☐ 2 inch ☐ 4 inch ☐ 6 inch

Other: _____

WELL MATERIAL ☑ PVC ☐ SS

Other: _____

Well Depth 23 ft. ☒ top of riser ☐ top of casing ☐ _____ ☐ measured ☐ historical

Water Depth 12.23 ft.

Well Volume _____

LNAPL/DNAPL Depth = NA

NAPL Thickness = NA

Depth of pump intake: ~18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 350 ml/min

Adjusted purge Rates/time/WL(record changes)

350 → 300 @ 0920

Flow rate at time of sampling: 300 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0910	0915	0920	0925	0930	0935	0940	0945	0950
Temp. (°C)		11.64	11.56	11.65	11.57	11.67	11.69	11.69	11.69
Conduct. (µmhos/cm)		30514	30137	29892	29902	29950	29919	29991	30005
DO (mg/L)		1.10	0.69	.68	.60	.65	.56	.57	.57
pH (su)		6.48	6.27	6.18	6.16	6.12	6.10	6.10	6.10
ORP (millivolts)		-18.2	-15.4	-15.2	-15.6	-15.6	-16.0	-15.8	-16.1
Turbidity (NTU)		25.1	20.0	11.5	6.54	4.83	4.53	4.21	4.12
Flow (ml/min)	350	350	350	300	300	300	300	300	300
Depth To Water (ft)	12.23	12.26	12.27	12.26	12.26	12.26	12.26	12.26	12.26
Cumulative Purge Vol. (gal or L)									

Time	0955	1000	1000
Temp. (°C)	11.65	11.65	S
Conduct. (µmhos/cm)	30001	30000	A
DO (mg/L)	.58	.57	M
pH (Std. Units)	6.10	6.10	P
Eh/ORP (millivolts)	-16.1	-16.2	L
Turbidity (NTU)	4.32	4.11	E
Flow (ml/min)	300	300	
Depth To Water (ft)	12.26	12.26	
Cumulative Purge Vol. (gal or L)			

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☒	☒
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: _____	☐	☐

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L AG	1000	none	
VPH	N	HCl	3	40mL A	1000	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kelleenby

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth CS	146483.000 4403	1/3/17 1410	

TRC Personnel: BA

Well ID: MW-203

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ____

WELL MATERIAL

[X] PVC [X] SS

Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ [ ] measured [ ] historical

Water Depth 13.32 ft.

Well Volume ____

LNAPL/DNAPL Depth = ____

NAPL Thickness = ____

Depth of pump intake: ____

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 220

Adjusted purge Rates/time/WL(record changes): 260, 270

Flow rate at time of sampling: 270

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1410	1415	1420	1425	1430	1435	1440	1445	1450
Temp. (°C)	Start	11.37	11.46	11.49	11.54	11.64	11.49	11.50	11.40
Conduct. (µmhos/cm)	Purge	4199.7	4196.4	4193.6	4194.7	4187.5	4187.4	4186.4	4173.3
DO (mg/L)		3.61	2.47	3.73	2.59	4.39	4.62	4.54	4.53
pH (su)		6.51	6.48	6.50	6.48	6.48	6.48	6.47	6.47
ORP (millivolts)		93.4	89.1	92.1	89.3	87.9	89.3	87.1	86.1
Turbidity (NTU)			28.4	23.7	26.4	21.0	19.3	18.7	13.6
Flow (ml/min)	220	260	270	→	→	→	→	→	→
Depth To Water (ft)	13.32	13.39	→	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1455	1500	1505	1510	1515	1320
Temp. (°C)	11.41	11.47	11.53	11.51	11.56	11.57
Conduct. (µmhos/cm)	4173.4	4183.1	4197.6	4201.6	4163.2	4184.6
DO (mg/L)	4.76	4.41	5.31	5.61	5.50	5.63
pH (Std. Units)	6.46	6.47	6.47	6.45	6.46	6.45
Eh/ORP (millivolts)	85.3	84.4	82.6	83.7	83.4	82.6
Turbidity (NTU)	11.4	9.74	8.76	10.41	11.3	9.70
Flow (ml/min)	270	→	→	→	→	→
Depth To Water (ft)	13.39	→	→	→	→	→
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments: Clear, NRO, NRS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VOA	N	HCl	3	40ml Amber	1320		
EPH	N	HCl	2	1L Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouth CS	140493.0000.4003	1/4/17 0845	Sheet 1 of 1

TRC Personnel: BA

Well ID: MW-204

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: ☑ 2 inch ☐ 4 inch ☐ 6 inch

Other: ______

WELL MATERIAL: ☑ PVC ☐ SS

Other: ______

Well Depth ______ ft. ☑ top of riser ☐ top of casing ☐ measured ☐ historical

Water Depth 13.28 ft.

Well Volume ______

LNAPL/DNAPL Depth = ______

NAPL Thickness = ______

Depth of pump intake: 18

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 330

Adjusted purge Rates/time/WL(record changes): 290

Flow rate at time of sampling: 290

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0850	0855	0900	0905	0910	0915	0920	0925	0930
Temp. (°C)	Start	12.36	12.27	12.24	12.21	12.23	12.48	12.46	12.35
Conduct. (µmhos/cm)	Purge	31913	32059	32147	32269	32373	32471	32502	32673
DO (mg/L)	↓	2.19	2.14	2.01	1.85	1.82	1.87	1.94	1.92
pH (su)		6.76	6.73	6.68	6.66	6.64	6.61	6.58	6.56
ORP (millivolts)		50.3	49.5	49.6	49.7	42.6	40.3	31.1	27.6
Turbidity (NTU)		49.4	47.3	42.1	33.4	24.7	21.3	19.7	6.41
Flow (ml/min)	330	290	→						
Depth To Water (ft)	13.28	13.32	→						
Cumulative Purge Vol. (gal or L)									

Time	0935	0940	0945	0950	0955	
Temp. (°C)	12.37	12.57	12.53	12.53	12.56	
Conduct. (µmhos/cm)	32417	32343	32004	31747	31515	
DO (mg/L)	2.03	2.10	2.24	2.39	2.26	
pH (Std. Units)	6.58	6.53	6.53	6.53	6.54	
Eh/ORP (millivolts)	20.7	15.2	10.5	7.2	6.2	
Turbidity (NTU)	5.31	2.55	2.31	2.01	1.93	
Flow (ml/min)	290	→				
Depth To Water (ft)	13.32	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amber	0955		MW-204
VPH	↓	HCl	3	40mL Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

ord	Project: Spectra	Project No.: 140143	Date/Time: 11/3/17
	TRC Personnel: Kathleen Sica		Sheet 1 of 1
		Well ID: MW-205	

	YES	NO
g Secure	X	
ar Intact	X	
p Intact	X	
Present	X	
Lock Present	X	

ng Equipment: YSI

w-thru Cell Volume:

ID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 15.00 ft. LNAPL/DNAPL Depth = —

Well Volume _____ NAPL Thickness = —

Depth of pump intake: ~18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400ml/min

Adjusted purge Rates/time/WL(record changes) 400 → 350 @ 1430

Flow rate at time of sampling: 350 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1430	1430	1435	1440	1445	1450	1455	1500	1505
Temp. (°C)	D	12.01	12.02	12.04	12.07	12.08	12.05	12.05	12.04
Conduct. (µmhos/cm)	V	27023	27320	27100	27108	27579	27611	27635	27653
DO (mg/L)	R	1.21	1.20	1.13	1.01	.90	1.12	2.19	2.36
pH (su)	G	7.08	7.08	7.08	7.08	7.07	7.07	7.06	7.06
ORP (millivolts)	E	-94.6	-94.3	-95.6	-96.1	-98.8	-95.6	-96.7	-96.8
Turbidity (NTU)		5.86	5.51	4.23	3.82	3.72	2.89	3.24	3.58
Flow (ml/min)	400	400	350	350	350	350	350	350	350
Depth To Water (ft)	15.02	15.02	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Cumulative Purge Vol. (gal or L)									

Time	1515	1515	1520	1525	1525	
Temp. (°C)	12.03	12.11	12.01	11.99	S	
Conduct. (µmhos/cm)	27810	27899	27911	27944	A	
DO (mg/L)	2.30	2.10	2.51	2.47	M	
pH (Std. Units)	7.06	7.05	7.05	7.05	P	
Eh/ORP (millivolts)	-94.8	-94.6	-84.2	-83.6	L	
Turbidity (NTU)	2.92	3.81	3.92	3.34	E	
Flow (ml/min)	350	350	350	350		
Depth To Water (ft)	15.00	15.00	15.00	15.00		
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPA	N	HCl	2	1LA	1525	none	
VPH	N	HCl	3	40MA	1525	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: _____

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/4/17	

TRC Personnel: Kolleen Shea

Well ID: MW 206

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.18 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400 ml/min

Adjusted purge Rates/time/WL(record changes): 400 → 350 @ 1220

Flow rate at time of sampling: 350ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1215	1220	1225	1230	1235	1240	1245	1250	1255
Temp. (°C)	p	12.97	12.92	12.91	12.96	13.03	13.01	13.03	12.99
Conduct. (µmhos/cm)	p	5081	5454	5458	5525	5448	5351	5321	5306
DO (mg/L)	U	3.28	2.97	2.97	3.00	3.33	3.36	3.40	3.42
pH (su)	K	6.58	6.44	6.44	6.43	6.42	6.42	6.42	6.41
ORP (millivolts)	G	-68.1	-74.5	-74.5	-73.8	-71.1	-71.0	-70.9	-69.9
Turbidity (NTU)	E	23.1	10.46	6.86	2.47	3.11	3.25	2.17	0.97
Flow (ml/min)	400	400	350	350	350	350	350	350	350
Depth To Water (ft)	14.18	14.21	14.20	14.20	14.20	14.19	14.19	14.19	14.19
Cumulative Purge Vol. (gal or L)									

Time	1300	1305	1310	1310			
Temp. (°C)	13.01	13.00	12.99	S			
Conduct. (µmhos/cm)	5299	5285	5280	S			
DO (mg/L)	3.51	3.50	3.61	A			
pH (Std. Units)	6.42	6.42	6.42	M			
Eh/ORP (millivolts)	-68.8	-68.2	-68.5	P			
Turbidity (NTU)	0.87	0.56	0.61	L			
Flow (ml/min)	350	350	350	E			
Depth To Water (ft)	14.19	14.19	14.19				
Cumulative Purge Vol. (gal or L)							

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1LA	1310	none	
VPH	N	HCl	3	40mlA	1310	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of ___
Spectra Weymouth C/S	HO143.0000	1/3/17 1235	

TRC Personnel: BA

Well ID: MW-400

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): BA ~~N/A~~ 2 ft.

Riser Stick-up (from ground): BA ~~N/A~~ 2 ft.

WELL DIAMETER: ☑ 2 inch ☐ 4 inch ☐ 6 inch

Other: ___

WELL MATERIAL: ☑ PVC ☐ SS

Other: ___

Well Depth ___ ft. ☒ top of riser ☐ top of casing ☐ ___ ☑ measured ☐ historical

Water Depth 13.31 ft.

Well Volume ___

LNAPL/DNAPL Depth = ___

NAPL Thickness = ___

Depth of pump intake: ___

Static water level after pump put into well: ___

Initial purge Rate/ Water Level (100-400 ml/min): 220

Adjusted purge Rates/time/WL(record changes): 260

Flow rate at time of sampling: 260

Total volume of water purged: ___

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1235	1240	1245	1250	1255	1300	1305	1310	1315
Temp. (°C)	Start	12.37	12.24	12.15	12.07	12.0	12.06	12.09	12.11
Conduct. (µmhos/cm)	Purge	4136.4	4127.6	4114.3	4117.7	4128.9	4150.5	4163.1	4171.1
DO (mg/L)		1.23	1.24	3.47	4.46	4.52	4.56	4.49	4.47
pH (su)		6.45	6.39	6.37	6.36	6.36	6.35	6.35	6.35
ORP (millivolts)		151.5	143.6	137.1	134.5	130.6	126.2	120.3	120.4
Turbidity (NTU)			29.6	24.3	21.6	17.7	7.40	2.27	2.17
Flow (ml/min)	220	260	→	→	→	→	→	→	→
Depth To Water (ft)	11.31	11.35	11.37	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1320	1325	1330	1335		
Temp. (°C)	12.18	12.18	12.28	12.16		
Conduct. (µmhos/cm)	4187.2	4199.8	4198.8	4211.1		
DO (mg/L)	4.47	4.63	4.72	4.75		
pH (Std. Units)	6.35	6.35	6.34	6.35		
Eh/ORP (millivolts)	119.8	118.6	117.7	116.9		
Turbidity (NTU)	2.31	2.10	1.96	1.90		
Flow (ml/min)	260	→	→	→		
Depth To Water (ft)	11.39	→	→	→		
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☑	☑
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: ___	☐	☐

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HNO_3	2	3 X 40mL	1335		
EPH		HCl	3	1L Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra	Project No.: 140145	Date/Time: 1/31/17	Sheet 1 of 1

TRC Personnel: Kellen Nee

Well ID: MW-401

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: _____

WELL MATERIAL

[X] PVC [ ] SS — Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.38 ft. — Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 200 ml/min

Adjusted purge Rates/time/WL(record changes)

200 → 150 @ 1305

Flow rate at time of sampling: 150 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1255	1300	1305	1310	1315	1320	1325	1330	1335
Temp. (°C)	P	12.40	12.39	12.51	12.50	12.53	12.69	12.71	12.72
Conduct. (µmhos/cm)		29077	29005	29026	29035	29219	29381	29382	29410
DO (mg/L)	V	1.86	1.71	1.73	1.70	1.60	1.58	1.54	1.55
pH (su)	R	7.02	7.02	7.02	7.02	7.01	7.01	7.01	7.02
ORP (millivolts)	E	21.2	21.2	20.6	20.5	19.6	19.5	16.9	15.0
Turbidity (NTU)		2.95	3.05	2.97	3.75	2.01	3.23	4.01	3.02
Flow (ml/min)	200	200	150	150	150	150	150	150	150
Depth To Water (ft)		14.42	14.42	14.42	14.42	14.42	14.42	14.42	14.42
Cumulative Purge Vol. (gal or L)									

Time	1340	1345	1350	1350		
Temp. (°C)	12.69	12.71	12.72	S		
Conduct. (µmhos/cm)	29398	29518	29879	A		
DO (mg/L)	1.55	1.54	1.54	M		
pH (Std. Units)	7.02	7.02	7.02	P		
Eh/ORP (millivolts)	14.6	14.2	14.1	L		
Turbidity (NTU)	3.12	3.11	3.60	E		
Flow (ml/min)	150	150	150			
Depth To Water (ft)	14.42	14.42	14.42			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
~~EPH~~	N	HCl	2	1 L A	1350	none	
VPH	N	HCl	3	40 mL A	1350	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kellen Nee

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/5/17	

TRC Personnel: Kollen Shue

Well ID: MW-402

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: _____

WELL MATERIAL: [X] PVC [ ] SS — Other: _____

Well Depth _____ ft. [ ] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.99 ft. Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~15ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 350ml/min

Adjusted purge Rates/time/WL(record changes)

350 @ 300 @ 0840

Flow rate at time of sampling: 300ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0835	0840	0845	0850	0855	0900	0905	0910	0915
Temp. (°C)	P	14.00	14.03	14.4	14.12	14.18	14.18	14.19	14.25
Conduct. (µmhos/cm)	U	35318	35305	35309	35703	36161	36165	35545	35545
DO (mg/L)	R	1.11	1.44	1.21	1.44	1.16	1.18	1.56	1.51
pH (su)	G	6.59	6.60	6.62	6.64	6.67	6.67	6.65	6.68
ORP (millivolts)	E	2.8	-25.2	-31.2	-44.2	-54.3	-54.6	-61.4	-61.6
Turbidity (NTU)		10.3	5.81	1.41	1.24	31.55	21.78	0.87	0.51
Flow (ml/min)	350	350	300	300	300	300	300	300	300
Depth To Water (ft)	14.99	15.03	15.03	15.03	15.03	15.03	15.03	15.03	15.03
Cumulative Purge Vol. (gal or L)									

Time	0920	0925	0930	0930		
Temp. (°C)	14.19	14.21	14.20	S		
Conduct. (µmhos/cm)	34975	34953	34968	A		
DO (mg/L)	1.52	1.59	1.60	M		
pH (Std. Units)	6.69	6.70	6.70	P		
Eh/ORP (millivolts)	-66.9	-66.8	-67.1	L		
Turbidity (NTU)	0.74	0.83	0.92	E		
Flow (ml/min)	300	300	300			
Depth To Water (ft)	15.03	15.03	15.03			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Were particles (yellow) precipitate that accumulates at bottom of purge bucket

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1LA	0930	none	
VPH	N	HCl	3	40mLA	0930	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kollen Shue

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S | Project No.: 140443.0000 -1403 | Date/Time: 1/4/17 1355 | Sheet 1 of 1

TRC Personnel: BA | Well ID: MW-403

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL: [X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [X] top of riser [ ] top of casing [ ] ______ [X] measured [ ] historical

Water Depth 13.65 ft.

Well Volume ______

LNAPL/DNAPL Depth = ______

NAPL Thickness = ______

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 270

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 270

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1355	1400	1405	1410	1415	1420	1425	1430	1435
Temp. (°C)	Start	13.46	13.99	13.51	13.68	13.69	13.41	13.67	13.63
Conduct. (μmhos/cm)	Purge	29052	29431	29606	31343	33593	34172	34379	36967
DO (mg/L)	↓	4.47	4.52	4.69	3.50	3.43	3.21	3.03	2.53
pH (su)		6.47	6.46	6.42	6.39	6.37	6.36	6.36	6.35
ORP (millivolts)		62.4	62.9	63.4	67.4	64.2	69.7	69.6	70.6
Turbidity (NTU)		6.91	6.32	4.48	3.72	3.64	3.60	3.14	2.71
Flow (ml/min)		270	→						
Depth To Water (ft)	13.65	13.67	→						
Cumulative Purge Vol. (gal or L)									

Time	1440	1445	1450	1455		
Temp. (°C)	13.61	13.56	13.59	13.60		
Conduct. (μmhos/cm)	36946	37821	38675	39272		
DO (mg/L)	2.61	2.76	2.53	2.61		
pH (Std. Units)	6.35	6.34	6.34	6.34		
Eh/ORP (millivolts)	70.7	70.7	71.7	72.5		
Turbidity (NTU)	2.96	2.87	2.74	2.68		
Flow (ml/min)	270	→				
Depth To Water (ft)	13.67	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (μmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Clear, N/o, N/s

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40ml Ambers	1455		MW-403
EPH	↓	↓	2	1 L Ambers	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/5/17	

TRC Personnel: Kolleen Allen

Well ID: MW-404

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: ______

Flow-thru Cell Volume: ______

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up (from ground) ______ ft.

Riser Stick-up (from ground) ______ ft.

WELL DIAMETER: ☐ 2 inch ☑ 4 inch ☐ 6 inch

Other: ______

WELL MATERIAL: ☑ PVC ☐ SS

Other: ______

Well Depth ______ ft. ☐ top of riser ☐ top of casing ☐ ______ ☐ measured ☐ historical

Water Depth 12.85 ft.

LNAPL/DNAPL Depth = slight smell

Well Volume ______

NAPL Thickness = ______

Depth of pump intake: ~ 15 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400 ml/min

Adjusted purge Rates/time/WL(record changes): 400 → 375 @ 1315

Flow rate at time of sampling: 375

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1310	1315	1320	1325	1330	1335	1340	1345	1350
Temp. (°C)	13.21	13.37	13.33	13.37	13.35	13.38	13.43	13.44	13.44
Conduct. (µmhos/cm)	45777	45774	45768	45744	45758	45760	45761	45781	45783
DO (mg/L)	1.02	0.55	0.53	0.49	0.47	0.46	0.45	0.42	0.41
pH (su)	6.54	6.40	6.40	6.35	6.34	6.34	6.33	6.32	6.32
ORP (millivolts)	-25.6	-13.5	-13.3	-11.9	-12.0	-12.0	-12.0	-11.6	-11.5
Turbidity (NTU)	4.51	6.59	5.66	2.69	3.25	3.77	3.53	3.21	7.34
Flow (ml/min)	400	400	375	375	375	375	375	375	375
Depth To Water (ft)	12.85	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Cumulative Purge Vol. (gal or L)									

Time	1355	1400	1405	1405		
Temp. (°C)	13.44	13.44	13.44	S		
Conduct. (µmhos/cm)	45780	45778	45781			
DO (mg/L)	0.42	0.43	0.43	A		
pH (Std. Units)	6.31	6.31	6.31	M		
Eh/ORP (millivolts)	-11.5	-11.5	-11.2	P		
Turbidity (NTU)	3.50	2.96	2.20	L		
Flow (ml/min)	375	375	375			
Depth To Water (ft)	12.88	12.88	12.88	E		
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1 L A	1405	none	
VPH	N	HCl	3	40 mL A	1405	none	

• Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Allen

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140145	1/4/17	

TRC Personnel: Kollenberg

Well ID: MW-405

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: XSD

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 14.33 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 400 ml/min

Adjusted purge Rates/time/WL(record changes)

100 @ 375 @ 1355

Flow rate at time of sampling: 375 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1350	1355	1400	1405	1410	1415	1420	1425	1430
Temp. (°C)	P	15.06	15.08	15.11	15.03	15.05	15.06	15.07	15.11
Conduct. (µmhos/cm)	P	32545	33158	35207	35397	36880	36920	36881	36981
DO (mg/L)	U	1.03	1.08	0.74	0.66	0.59	0.57	0.53	0.53
pH (su)	R	5.84	5.86	5.89	5.89	5.88	5.88	5.88	5.87
ORP (millivolts)	G	98.2	98.9	101.2	101.1	101.1	101.2	101.1	101.0
Turbidity (NTU)	E	6.64	3.95	3.52	2.38	1.79	1.50	1.02	1.31
Flow (ml/min)	400	400	375	375	375	375	375	375	375
Depth To Water (ft)	14.33	14.35	14.35	14.35	14.35	14.35	14.35	14.35	14.35
Cumulative Purge Vol. (gal or L)									

Time	1435	1440	1440						
Temp. (°C) 1435 1/4 15.11	~~37141~~	~~37359~~	15.11 1/4						
Conduct. (µmhos/cm)	37141	37359	A						
DO (mg/L)	0.54	0.53							
pH (Std. Units)	5.87	5.87	M						
Eh/ORP (millivolts)	101.0	101.1	P						
Turbidity (NTU)	1.01	1.97	L						
Flow (ml/min)	375	375							
Depth To Water (ft)	14.33	14.33	E						
Cumulative Purge Vol. (gal or L)									

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1-L A	1440	none	
VPH	N	HCl	3	40ML A	1440	none	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kollenberg

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Waynesburg C/S | Project No.: 140813.0002 4403 | Date/Time: 1/5/17 1510 | Sheet 1 of 1

TRC Personnel: BA | Well ID: MW-406 | DUP-2

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other:

WELL MATERIAL: [✓] PVC [ ] SS

Other:

Well Depth ___ ft. [X] top of riser [ ] top of casing | [X] measured [ ] historical

Water Depth 13.84 ft. | LNAPL/DNAPL Depth = 13.80

Well Volume ___ | NAPL Thickness = 0.04

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 280

Adjusted purge Rates/time/WL(record changes): 320

Flow rate at time of sampling: 320

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1510	1515	1520	1525	1530	1535	1540	1545	1550
Temp. (°C)	Start	12.56	12.61	12.59	12.62	12.70	12.66	12.62	12.57
Conduct. (µmhos/cm)	Pumping	976	26311	27401	26407	28614	35281	37205	37477
DO (mg/L)	↓	11.12	3.74	3.01	2.86	2.25	1.80	1.87	2.00
pH (su)		6.91	6.73	6.27	6.19	6.18	6.19	6.22	6.22
ORP (millivolts)		-104.4	-93.6	-84.9	-80.9	-77.4	-73.7	-76.1	-77.2
Turbidity (NTU)		000		20.3	13.9	10.1	8.94	7.31	4.22
Flow (ml/min)	280	320	→						
Depth To Water (ft)	13.84	13.89	→						
Cumulative Purge Vol. (gal or L)									

Time	1555	1600
Temp. (°C)	12.59	12.61
Conduct. (µmhos/cm)	37711	37812
DO (mg/L)	2.10	2.13
pH (Std. Units)	6.22	6.22
Eh/ORP (millivolts)	-78.7	-79.2
Turbidity (NTU)	3.97	3.74
Flow (ml/min)	320	→
Depth To Water (ft)	13.89	→
Cumulative Purge Vol. (gal or L)		

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Product @ 13.80' DTW: 13.84'
Tubing able to pierce through product and into water table
Clear, Sl. odor, Sl. Sheen

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40 ml Amber	1600		MW-406
EPH	↓	↓	2	1 L Amber	↓		↓

DUP-2

• Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	1/5/17	

TRC Personnel: Kollenkiea

Well ID: MW-407

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: ☐ 2 inch ☐ 4 inch ☐ 6 inch — Other: _____

WELL MATERIAL: ☒ PVC ☐ SS — Other: _____

Well Depth _____ ft. ☒ top of riser ☐ top of casing ☐ measured ☐ historical

Water Depth 14.57 ft. — Well Volume _____

LNAPL/DNAPL Depth = 14.54

NAPL Thickness = 0.03

Depth of pump intake: ~ 18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 350 ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1515	1520	1525	1535	1540	1545	1550	1555	1600
Temp. (°C)	P	13.12	13.14	13.13	13.24	13.24	13.28	13.31	13.32
Conduct. (µmhos/cm)		18080	18065	17947	18014	18001	18013	18020	18035
DO (mg/L)	V	1.74	2.05	2.09	1.87	1.89	1.87	1.89	1.91
pH (su)	K	6.54	6.54	6.53	6.55	6.55	6.55	6.55	6.55
ORP (millivolts)	S	-116.6	-116.7	-114.8	-120.0	-126.0	-127.0	-128.1	-127.9
Turbidity (NTU)	E	11.11	10.16	5.52	3.77	3.09	2.65	2.37	3.15
Flow (ml/min)		350	350	350	350	350	350	350	350
Depth To Water (ft)	14.57	14.57	14.57	14.57	14.57	14.57	14.57	14.57	14.57
Cumulative Purge Vol. (gal or L)									

Time	1605	1610	1610			
Temp. (°C)	13.32	13.33	S			
Conduct. (µmhos/cm)	18016	18000	A			
DO (mg/L)	1.92	1.89	M			
pH (Std. Units)	6.55	6.55	P			
Eh/ORP (millivolts)	-129.2	-128.4	L			
Turbidity (NTU)	3.12	3.05	E			
Flow (ml/min)	350	350				
Depth To Water (ft)	14.57	14.57				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	☒	☒
Submersible Pump	☐	☐
Bladder Pump	☐	☐
Bailer	☐	☐
Other: _____	☐	☐

Comments: faint sheen in water, dump in drum

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L A	1610		
VPH	N	HCl	3	40mL A	1610		

- Consult the applicable regulatory guidance for the specific criteria.

Signed: _____

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S 4003 | Project No.: 140483.0000 | Date/Time: 1/5/17 0845 | Sheet 1 of 1

TRC Personnel: BA | Well ID: MW-408

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: ✓ 2 inch; 4 inch; 6 inch

Other:

WELL MATERIAL: [x] PVC [ ] SS

Other:

Well Depth ____ ft. ✓ top of riser; top of casing; ✓ measured; historical

Water Depth 13.36 ft.

Well Volume

LNAPL/DNAPL Depth = ____

NAPL Thickness = ____

Depth of pump intake: 19'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 230

Adjusted purge Rates/time/WL(record changes): 280, 300

Flow rate at time of sampling: 300

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0845	0850	0855	0900	0905	0910	0915	0920	0925
Temp. (°C)	Start	10.31	11.08	10.98	11.39	11.46	11.36	11.35	11.38
Conduct. (µmhos/cm)	purge	6741	7592	7240	6697	6621	6774	6731	6744
DO (mg/L)	↓	6.31	7.69	6.44	7.41	7.24	6.91	6.44	7.31
pH (su)		6.87	6.91	6.86	6.79	6.78	6.76	6.75	6.75
ORP (millivolts)		-130.3	-128.8	-134.2	-151.3	-152.8	-150.8	-154.1	-153.7
Turbidity (NTU)		73.4	68.3	57.4	41.6	35.4	27.1	24.3	18.4
Flow (ml/min)	230	230	280	300	→	→	→	→	→
Depth To Water (ft)	13.36	13.39	13.39	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	0930	0935	0940	0945	0950
Temp. (°C)	11.41	11.63	11.33	11.46	11.60
Conduct. (µmhos/cm)	6725	6954	6568	6454	6457
DO (mg/L)	4.31	4.24	4.11	4.03	3.97
pH (Std. Units)	6.74	6.72	6.76	6.74	6.76
Eh/ORP (millivolts)	-155.5	-160.3	-163.4	-165.0	-162.1
Turbidity (NTU)	16.7	12.7	4.75	5.73	7.31
Flow (ml/min)	300	→	→	→	→
Depth To Water (ft)	13.39	→	→	→	→
Cumulative Purge Vol. (gal or L)					

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	✓	✓
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, N/O, N/S

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	3 40ML Amber	0950		MW-408
EPH	↓	↓	2	1L Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed:

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S — Project No.: 140113.0004.4403 — Date/Time: 1/4/17 1025 — Sheet 1 of 1

TRC Personnel: BA — Well ID: MW-409

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other:

WELL MATERIAL: [X] PVC [ ] SS — Other:

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ — [X] measured [ ] historical

Water Depth 13.08 ft. — Well Volume ____ — LNAPL/DNAPL Depth = ____ — NAPL Thickness = ____

Depth of pump intake: 15'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 220

Adjusted purge Rates/time/WL(record changes): 270

Flow rate at time of sampling: 270

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1035	1040	1045	1050	1055	1100	1105	1110	1115
Temp. (°C)	Start		12.23	12.29	12.37	12.50	12.85	12.66	12.14
Conduct. (µmhos/cm)	Purge		6057	7107	6688	6540	3568	6321	6440
DO (mg/L)	↓		6.97	~~6.99~~ 2.99	10.14	11.40	8.85	10.91	10.58
pH (su)	↓		6.85	6.71	6.64	6.70	6.70	6.69	6.67
ORP (millivolts)	↓		-130.0	-127.2	-134.1	-136.7	-133.3	-135.7	-139.9
Turbidity (NTU)	↓		21.6	14.1	10.2	8.16	5.01	7.91	7.31
Flow (ml/min)	~~220~~ 270	270	→	→	→	→	→	→	→
Depth To Water (ft)	~~13.05~~ 13.17	13.17	13.18	→	→	→	→	→	→
Cumulative Purge Vol. (gal or L)									

Time	1120	1125	1130	1135	1140	1145
Temp. (°C)	12.34	12.10	12.31	12.37	12.38	
Conduct. (µmhos/cm)	6315	6251	6166	6260	6269	
DO (mg/L)	9.92	9.54	7.93	7.35	7.39	
pH (Std. Units)	6.68	6.68	6.69	6.69	6.68	
Eh/ORP (millivolts)	-144.0	-145.9	-149.9	-150.3	-151.0	
Turbidity (NTU)	6.21	4.73	3.74	2.94	2.91	
Flow (ml/min)	270	→	→	→	→	
Depth To Water (ft)	13.18	→	→	→	→	
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, NO, NS

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L Amber	1140		MW-409
VPH	↓	↓	3	40mL Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Project: Project No.:	Date/Time:	Sheet 1 of 1
Spectra Weymouth 140143	11/20/17	

TRC Personnel: Kolleen Mea | Well ID: MW-410

... Record

INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: pumpstaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up ______ ft. (from ground)

Riser Stick-up (from ground) ______ ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: ______

WELL MATERIAL

[X] PVC [ ] SS

Other: ______

Well Depth ______ ft. [ ] top of riser [ ] top of casing [ ] measured [ ] historical

Water Depth — ft.

Well Volume ______

LNAPL/DNAPL Depth = 13.02

NAPL Thickness = ______

Depth of pump intake: 18 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min):

Adjusted purge Rates/time/WL(record changes)

Flow rate at time of sampling: 300 mL/m

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1135	1140	1145	1150	1155	1200	1205	1210	1215
Temp. (°C)	P	11.78	11.83	11.83	11.76	11.78	11.85	11.78	11.79
Conduct. (µmhos/cm)	U	31990	35260	35537	35898	36233	36653	36901	36920
DO (mg/L)	R	4.91	4.66	4.73	4.82	4.93	5.10	5.24	5.30
pH (su)	G	6.68	6.51	6.49	6.46	6.44	6.41	6.39	6.39
ORP (millivolts)	E	-74.2	-39.8	-27.8	-26.0	-24.3	-24.2	-39.6	-41.6
Turbidity (NTU)		22.2	12.7	8.27	8.04	5.59	2.84	2.98	2.98
Flow (ml/min)		300	300	300	300	300	300	300	300
Depth To Water (ft) product	13.02	—	—	—	—	—	—	—	—
Cumulative Purge Vol. (gal or L)									

Time	1220	1225	1230	1230		
Temp. (°C)	11.81	11.80	11.79	S		
Conduct. (µmhos/cm)	37011	37121	37210	A		
DO (mg/L)	5.34	5.37	5.40	M		
pH (Std. Units)	6.37	6.37	6.37	P		
Eh/ORP (millivolts)	-43.3	-45.9	-46.2	L		
Turbidity (NTU)	1.25	0.89	1.20	E		
Flow (ml/min)	300	300	300			
Depth To Water (ft)	—	—	—			
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ______		

Comments: Final DTW: 13.08 ft

dump ~6 gallons of water into labeled drum

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	HCl	2	1L	1230	NA	
VPH	N	HCl	3	40mL	1230	NA	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Mea

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	14043	1/4/17	

TRC Personnel: Kolleen Shea

Well ID: MW-411

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth _____ ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 12.86 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): ~18ft

Adjusted purge Rates/time/WL(record changes)

400@375@1040

Flow rate at time of sampling: 375ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1035	1040	1045	1050	1055	1100	1105	1110	1115
Temp. (°C)	[illegible]	13.73	13.71	13.68	13.70	13.68	13.66	13.67	13.67
Conduct. (µmhos/cm)	[illegible]	29071	28986	28983	28826	28826	28658	28126	29135
DO (mg/L)	[illegible]	1.01	.99	.56	.61	.52	.49	.49	.51
pH (su)	[illegible]	6.03	6.02	6.02	6.03	6.02	6.02	6.03	6.03
ORP (millivolts)	[illegible]	-39.3	-40.7	-46.6	-49.4	-52.9	-54.2	-57.9	-57.8
Turbidity (NTU)	[illegible]	5.50	4.60	4.12	4.05	4.39	4.05	3.82	3.92
Flow (ml/min)	400	400	375	375	375	375	375	375	375
Depth To Water (ft)	12.86	12.88	12.88	12.88	12.88	12.88	12.89	12.89	12.89
Cumulative Purge Vol. (gal or L)									

Time	1120	1125	1125			
Temp. (°C)	13.72	13.71	S			
Conduct. (µmhos/cm)	29139	29135	A			
DO (mg/L)	.51	.52	M			
pH (Std. Units)	6.02	6.02	P			
Eh/ORP (millivolts)	-58.3	-58.5	L			
Turbidity (NTU)	4.12	3.84	E			
Flow (ml/min)	375	375				
Depth To Water (ft)	12.89	12.89				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Baifer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
FPH	N	HCl	2	1LA	1125	None	
VPH	N	HCl	3	40mL A	1125	None	

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Shea

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet ___ of ___
Specra	143140	1/5/17	Sheet 1 of 1

TRC Personnel: Kolleen Sullivan

Well ID: MW-412 (DUP-1)

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment:

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: ☐ 2 inch ☒ 4 inch ☐ 6 inch

Other: _____

WELL MATERIAL: ☒ PVC ☐ SS

Other: _____

Well Depth 15.47 ft. ☒ top of riser ☐ top of casing ☐ _____ ☐ measured ☐ historical

Water Depth 13.37 ft.

Well Volume _____

LNAPL/DNAPL Depth = _____

NAPL Thickness = Sheen

Depth of pump intake: ~18ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 250 ml/min

Adjusted purge Rates/time/WL(record changes) 250 → 200 @1040

Flow rate at time of sampling: 200ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1035	1040	1045	1050	1055	1100	1105	1110	1115
Temp. (°C)	P	12.64	12.57	12.49	12.55	12.59	12.61	12.65	12.70
Conduct. (µmhos/cm)	U	30388	30392	30397	30385	30395	30365	30345	30355
DO (mg/L)	R	1.38	1.13	1.15	1.03	1.07	0.98	0.99	0.94
pH (su)	G	6.30	6.24	6.24	6.22	6.22	6.21	6.21	6.20
ORP (millivolts)	E	8.5	11.5	12.6	11.4	11.4	13.1	12.9	13.2
Turbidity (NTU)	T	21.0	12.5	11.0	9.21	7.28	6.65	7.10	6.44
Flow (ml/min)		250	250	200	200	200	200	200	200
Depth To Water (ft)		13.37	13.42	13.42	13.42	13.42	13.42	13.42	13.42
Cumulative Purge Vol. (gal or L)									

Time	1120	1125	1130	1130		
Temp. (°C)	12.68	12.67	12.66	S		
Conduct. (µmhos/cm)	30359	30316	30317	T		
DO (mg/L)	0.92	0.92	0.91	A		
pH (Std. Units)	6.19	6.18	6.19	B		
Eh/ORP (millivolts)	14.6	14.4	15.4	I		
Turbidity (NTU)	4.89	4.48	4.47	L		
Flow (ml/min)	200	200	200	I		
Depth To Water (ft)	13.42	13.42	13.42	Z		
Cumulative Purge Vol. (gal or L)				E		

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments: ~~fluffy brown ppt~~ fluffy brownish precipitate at bottom of purge bucket

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
TPH	N	HCl	2	1LA	1130	~~MW-12~~	DUP-1
VPH	N	HCl	3	40 MLA	1130	~~MW-12~~	DUP-1

- Consult the applicable regulatory guidance for the specific criteria.

Signed: Kolleen Sullivan

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S	Project No.: [illegible]	Date/Time: 1/3/17 1030	Sheet 1 of 1
TRC Personnel: BA		Well ID: MW-413	

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	✓	
Concrete Collar Intact	✓	
PVC Stick-up Intact	✓	
Well Cap Present	✓	
Security Lock Present	✓	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other:

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ ; [X] measured [ ] historical

Water Depth 13.71 ft.

Well Volume ____

LNAPL/DNAPL Depth = ____

NAPL Thickness = ____

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 330

Flow rate at time of sampling: 330

Total volume of water purged:

PID SCREENING MEAS.

Background	
Well Mouth	

WELL MATERIAL

[X] PVC [ ] SS

Other:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1030	1035	1040	1045	1050	1055	1100	1105	1110
Temp. (°C)	Start	11.64	11.88	12.14	12.10	11.93	11.91	11.75	11.70
Conduct. (µmhos/cm)	Purge	26013	26174	27066	27641	27655	27806	27884	28030
DO (mg/L)	↓	5.21	4.95	4.29	4.02	3.80	3.30	3.59	1.80
pH (su)		6.37	6.33	6.26	6.24	6.20	6.18	6.17	6.17
ORP (millivolts)		-43.0	-41.4	-40.4	-38.7	-36.7	-34.5	-32.7	-30.2
Turbidity (NTU)		54.3	37.9	31.7	26.9	23.4	20.2	15.6	13.1
Flow (ml/min)	300	330	→						
Depth To Water (ft)	13.71	13.75	→						
Cumulative Purge Vol. (gal or L)									

Time	1115	1120	1125	1130	1135	1140
Temp. (°C)	11.74	11.88	11.72	12.07	11.98	12.09
Conduct. (µmhos/cm)	28134	28165	28128	28147	28150	28141
DO (mg/L)	1.74	1.57	1.50	1.13	1.21	1.21
pH (Std. Units)	6.16	6.16	6.16	6.16	6.16	6.16
Eh/ORP (millivolts)	-29.4	-27.3	-26.2	-25.7	-24.9	-24.6
Turbidity (NTU)	13.4	12.8	10.41	8.85	7.41	7.43
Flow (ml/min)	330	→				
Depth To Water (ft)	13.75	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Note: YSI DO readings high, recalibrated @ 1035, no readings then - Start @ 1040
Clear, Sl. sheen, Sl. petro odor

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40mL Amber	1140		
EPH	↓	↓	2	1L Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet
Spectra Weymouthers	14443.4403	1/6/17 1235	Sheet 1 of 1

TRC Personnel: BA

Well ID: MW-414

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): 2 ft.

Riser Stick-up (from ground): 2 ft.

WELL DIAMETER: [ ] 2 inch [X] 4 inch [ ] 6 inch

Other:

WELL MATERIAL: [X] PVC [ ] SS

Other:

Well Depth ____ ft. [X] top of riser [ ] top of casing [X] measured [ ] historical

Water Depth 14.65 ft.

Well Volume

LNAPL/DNAPL Depth = ~~14.60~~ 14.60 BA

NAPL Thickness = 0.05 BA

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 300

Adjusted purge Rates/time/WL(record changes): 330

Flow rate at time of sampling:

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1235	1240	1245	1250	1255	1300	1305	1310	1315
Temp. (°C)	Start	12.05	12.11	12.27	12.16	12.06	12.16	12.17	12.21
Conduct. (µmhos/cm)	Purge	26707	26731	26688	26367	26195	26055	25745	25640
DO (mg/L)	↓	6.31	6.36	6.41	6.50	6.54	6.58	6.64	6.69
pH (su)		6.26	6.26	6.24	6.22	6.21	6.21	6.21	6.21
ORP (millivolts)		-32.4	-33.1	-35.1	-38.4	-34.3	-40.3	-42.2	-43.2
Turbidity (NTU)		42.7	33.9	31.6	22.5	17.2	13.9	9.31	8.84
Flow (ml/min)	300	330	→						
Depth To Water (ft)	14.65	→							
Cumulative Purge Vol. (gal or L)									

Time	1320					
Temp. (°C)	12.22					
Conduct. (µmhos/cm)	25480					
DO (mg/L)	6.70					
pH (Std. Units)	6.21					
Eh/ORP (millivolts)	-43.7					
Turbidity (NTU)	7.31					
Flow (ml/min)	330					
Depth To Water (ft)	14.65					
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, sl petro odor, sheen

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VPH	N	HCl	3	40mL Amber	1320		MW-414
EPH	↓	↓	2	1L Amber	↓		↓

- Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectrum/Plymouth CS | Project No.: MON43.000.4603 | Date/Time: 1/5/17 1310 | Sheet 1 of 1

TRC Personnel: BA

Well ID: MW-415

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground) 2 ft.

Riser Stick-up (from ground) 2 ft.

WELL DIAMETER [X] 2 inch [ ] 4 inch [ ] 6 inch

Other:

WELL MATERIAL [X] PVC [ ] SS

Other:

Well Depth ____ ft. [X] top of riser [ ] top of casing [X] measured [ ] historical

Water Depth 15.35 ft.

Well Volume

LNAPL/DNAPL Depth =

NAPL Thickness =

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/Water Level (100-400 ml/min): 260

Adjusted purge Rates/time/WL(record changes) 300, 330

Flow rate at time of sampling: 330

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	1310	1315	1320	1325	1330	1335	1340	1345	1350
Temp. (°C)	Start Purge ↓	13.03	13.45	13.33	13.65	13.58	13.98	14.01	13.83
Conduct. (µmhos/cm)		25452	25446	25622	25768	25797	25953	26093	26100
DO (mg/L)		1.79	1.89	1.76	1.34	1.22	0.51	0.99	1.05
pH (su)		6.78	6.75	6.72	6.72	6.72	6.72	6.76	6.73
ORP (millivolts)		-43.1	-56.2	-67.8	-72.7	-74.6	-81.0	-85.3	-88.4
Turbidity (NTU)		7.86	4.97	3.98	2.86	2.63	1.65	1.37	1.21
Flow (ml/min)	260	300	330	→					
Depth To Water (ft)	15.35	15.39	→						
Cumulative Purge Vol. (gal or L)									

Time	1355	1400	1405	1410	1415	1420
Temp. (°C)	13.84	13.87	13.86	13.86	14.03	14.01
Conduct. (µmhos/cm)	26069	26031	26100	26059	26071	26107
DO (mg/L)	1.19	1.24	1.37	1.55	1.41	1.39
pH (Std. Units)	6.73	6.73	6.73	6.74	6.74	6.74
Eh/ORP (millivolts)	-89.4	-93.4	-97.6	-98.3	-101.2	-103.4
Turbidity (NTU)	0.99	0.91	0.89	0.75	0.59	0.61
Flow (ml/min)	330	→				
Depth To Water (ft)	15.39	→				
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other:		

Comments: Clear, Sheen, Sl. Petro odor

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
VOA	N	HCl	3	40ml Amber	1420		MW-415
EPH	↓	↓	2	1 L Amber	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: [signature]

Rev: April 2014

TRC

Groundwater Field Data Record

Project: Spectra Weymouth C/S | Project No.: 420143.0000 | Date/Time: 1/3/17 0945 | Sheet 1 of 8

TRC Personnel: BA | Well ID: BMW-41B

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: Peristaltic Pump

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	
Well Mouth	

Protective Casing Stick-up (from ground): N/A ft.

Riser Stick-up (from ground): N/A ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch — Other: ____

WELL MATERIAL: [X] PVC [ ] SS — Other: ____

Well Depth ____ ft. [X] top of riser [ ] top of casing [ ] ____ | [X] measured [ ] historical

Water Depth 11.32 ft. | Well Volume ____ | LNAPL/DNAPL Depth = ____ | NAPL Thickness = ____

Depth of pump intake: 18'

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 240 ML/MIN

Adjusted purge Rates/time/WL(record changes): 270 ML/MIN

Flow rate at time of sampling: 270 m/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0945	0950	0955	1000	1005	1010	1015	1020	1025
Temp. (°C)	Start Purge	11.93	11.91	11.81	11.98	11.86	11.90	11.94	
Conduct. (µmhos/cm)			3174.6	3044.6	3369.0	3571.6	3361.6	3476.1	3481.0
DO (mg/L)		2.21	1.99	1.87	2.11	2.31	2.39	2.41	2.68
pH (su)		6.24	6.25	6.27	6.28	6.28	6.29	6.29	6.29
ORP (millivolts)		191.3	190.1	186.1	181.7	173.4	171.6	174.3	173.7
Turbidity (NTU)		OOR	24.6	24.7	22.7	19.3	17.6	15.5	17.1
Flow (ml/min)	240	270							
Depth To Water (ft)	11.32	11.37	11.37	11.38					
Cumulative Purge Vol. (gal or L)									

Time	1030	1035	1040	1045	1050	1055
Temp. (°C)	12.15	12.10	12.04	12.00	12.14	12.22
Conduct. (µmhos/cm)	3561.3	3571.0	3592	4016.0	3950.1	3957.6
DO (mg/L)	2.71	2.81	3.02	3.16	3.30	3.17
pH (Std. Units)	6.29	6.30	6.31	6.28	6.29	6.29
Eh/ORP (millivolts)	172.9	174.0	172.8	173.1	169.1	168.3
Turbidity (NTU)	16.7	17.2	17.0	22.1	10.01	8.27
Flow (ml/min)	270					
Depth To Water (ft)	10.38					
Cumulative Purge Vol. (gal or L)					5 gal	

Stabilization Criteria* (3 consecutive readings)
- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: ____		

Comments: Clear, No, No

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
EPH	N	~~ASTM~~ HCl	2	1L Amber	1055		MW-41B (D)
VPH	↓	HNO_3	3	3 40mL	↓		↓

* Consult the applicable regulatory guidance for the specific criteria.

Signed: ____

Rev: April 2014

TRC

Groundwater Field Data Record

Project:	Project No.:	Date/Time:	Sheet 1 of 1
Spectra	140143	11/3/17 0955	

TRC Personnel: Kaileen Shea

Well ID: MW417

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	X	
Concrete Collar Intact	X	
PVC Stick-up Intact	X	
Well Cap Present	X	
Security Lock Present	X	

Sampling Equipment: YSI

Flow-thru Cell Volume:

PID SCREENING MEAS.

Background	—
Well Mouth	—

Protective Casing Stick-up _____ ft. (from ground)

Riser Stick-up (from ground) _____ ft.

WELL DIAMETER: [X] 2 inch [ ] 4 inch [ ] 6 inch

Other: _____

WELL MATERIAL: [✓] PVC [ ] SS

Other: _____

Well Depth — ft. [X] top of riser [ ] top of casing [ ] _____ [ ] measured [ ] historical

Water Depth 11.05 ft.

Well Volume _____

LNAPL/DNAPL Depth = —

NAPL Thickness = —

Depth of pump intake: ~17 ft

Static water level after pump put into well:

Initial purge Rate/ Water Level (100-400 ml/min): 200 ml/min

Adjusted purge Rates/time/WL(record changes) 200 @ 150 @ 1000

Flow rate at time of sampling: 150ml/min

Total volume of water purged:

FIELD WATER QUALITY MEASUREMENTS (record at appropriate intervals)

Time	0955	1000	1005	1010	1015	1020	1025	1030	1035
Temp. (°C)	11.62	11.93	11.93	11.94	11.94	11.95	11.99	12.03	12.11
Conduct. (µmhos/cm)	36131	35965	35964	35989	35954	36017	36052	36103	36152
DO (mg/L)	1.33	1.40	1.39	1.38	1.35	1.36	1.26	1.21	1.17
pH (su)	6.62	6.38	6.37	6.35	6.33	6.33	6.33	6.32	6.30
ORP (millivolts)	63.3	104.36	117.5	115.6	117.0	119.1	122.3	126.3	126.4
Turbidity (NTU)	19.37	15.53	15.41	14.32	12.91	10.51	9.97	9.56	10.01
Flow (ml/min)	200	150	150	150	150	150	150	150	150
Depth To Water (ft)	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07
Cumulative Purge Vol. (gal or L)									

Time	1040	1045				
Temp. (°C)	12.12	S				
Conduct. (µmhos/cm)	36163	A				
DO (mg/L)	1.17	M				
pH (Std. Units)	6.30	P				
Eh/ORP (millivolts)	126.9	L				
Turbidity (NTU)	9.98	E				
Flow (ml/min)	150					
Depth To Water (ft)	11.07					
Cumulative Purge Vol. (gal or L)						

Stabilization Criteria*
(3 consecutive readings)

- Temperature: ± 3 %
- Conduct. (µmhos/cm): ± 3 %
- DO (mg/L): ± 10 % (for values >0.5 mg/L)
- pH (Std. Units): ± 0.1 SU
- ORP (millivolts): ± 10 mV
- Turbidity (NTU): +/- 10 % (for values >5.0 NTUs)
- Drawdown: < 0.3 ft (can be greater as long as water level stabilizes above well screen)

	Purge	Sample
Peristaltic Pump	X	X
Submersible Pump		
Bladder Pump		
Bailer		
Other: _____		

Comments:

Analytical Parameter	Filtered (Y/N)	Preservation	# Bottles	Size/Type Bottles	Time Collected	QC	Sample #
TPH	N	HCl	3	1LA	1045	None	MW-417
VPH	N	HCl	3	40mLA	1045	None	

* Consult the applicable regulatory guidance for the specific criteria.

Signed: Kaileen Shea

Rev: April 2014

Appendix C
Manual Skimming Test at MW-414
IRA Completion Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Site:	6 Bridge St., Weymouth, MA	**Project #:**	140143.0000.4903 Phase 1
Well:	MW-414	**Samplers:**	C.Race, L.Hopp, A.Cornell
Evacuation Method:	Peristaltic pump with 1/2" x 5/8" tubing	**LNAPL Density**	0.9785

Well Information		**LNAPL Information**	
Casing Diameter (inches):	4	**Fluid Type:**	Weathered, sticky, viscous No. 2 fuel oil
Total Depth (feet):	23	**Volume Removed (ml)**	See below
Depth to Top of Screen (feet):	8	**Initial Volume (ml)**	3000
Screen Length (feet):	15	**ROI Ratio**	10 estimate

*Note all lenth measurements in feet, all volume measurements in ml unless noted

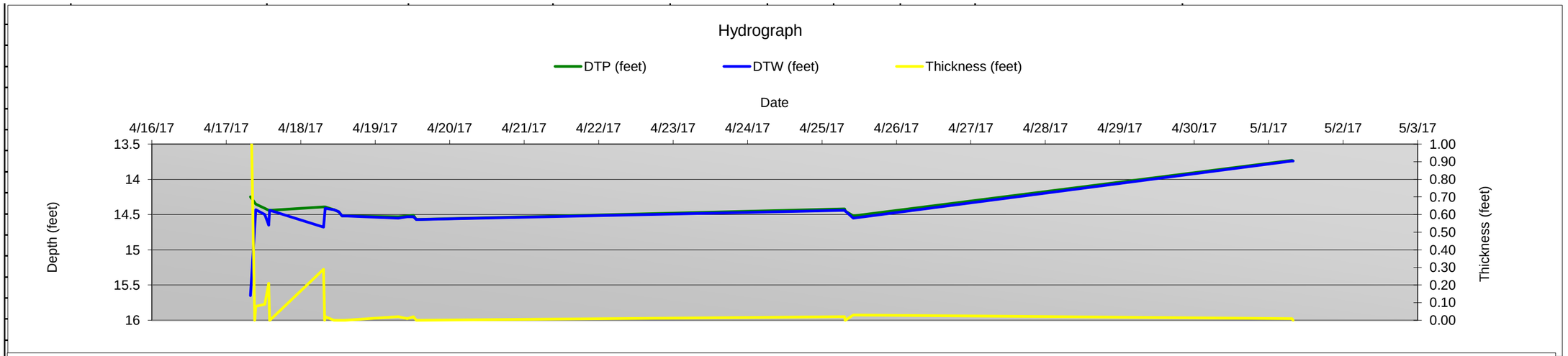
Borhole Diameter (inches):
9
Porosity:
0.35
LNAPL Saturation:
0.5
Effective Well Diameter (ft)
0.22

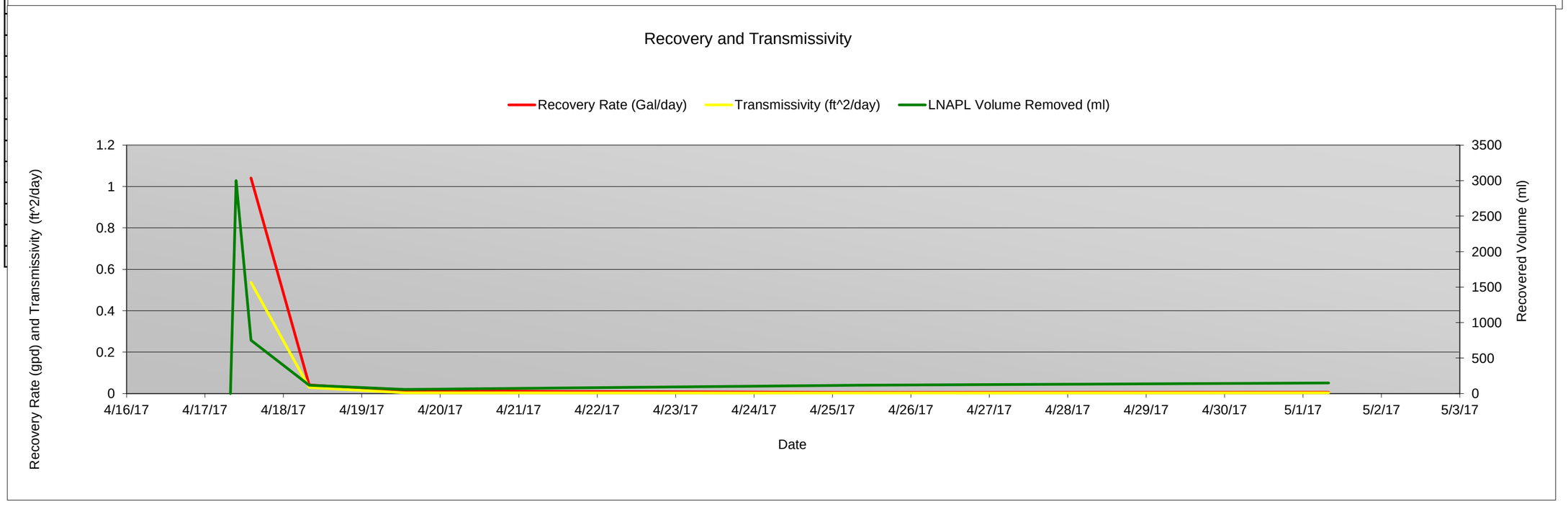
	LNAPL Volume Per Foot
ft^3	0.149307463
gal	1.11689448
ml	4227.917044

$$T_n = \frac{Q_n \ln \frac{R_{oi}}{r_w}}{2\pi S_n}$$

Pump	Date	Time Hour		Time Minute	Elapsed Time (min)	Recovery Time (min)	LNAPL Volume Removed (ml)	H2O Volume Removed (ml)	DTP (feet)	DTW (feet)	Thickness (feet)	Comments	Drawdown	Recovery Rate (Gal/day)	Transmissivity (ft^2/day)
Static	4/17/2017	7	:	47	0.00		0	0	14.25	15.65	1.40				
Pump On	4/17/2017	9	:	10	83.00						0.00				
Pump Off	4/17/2017	9	:	30	103.00		3000	8000	14.35	14.43	0.08	Test starts.			
Pump Off	4/17/2017	12	:	26	279.00				14.41	14.50	0.09				
Pump Off	4/17/2017	13	:	40	353.00				14.44	14.65	0.21				
Pump On	4/17/2017	13	:	58	371.00				14.44	14.44	0.00				
Pump Off	4/17/2017	14	:	4	377.00	274.000	750	3250	14.44	14.44	0.00		0.19	1.041	0.5370
Pump Off	4/18/2017	7	:	22	1415.00				14.39	14.68	0.29				
Pump On	4/18/2017	7	:	44	1437.00						0.00				
Pump Off	4/18/2017	7	:	53	1446.00	1069.000	118	11000	14.39	14.41	0.02		0.14	0.04	0.0294
Pump Off	4/18/2017	10	:	44	1617.00				14.43	14.43	0.00				
Pump Off	4/18/2017	12	:	15	1708.00				14.46	14.46	0.00				
Pump Off	4/18/2017	13	:	21	1774.00				14.52	14.52	0.00				
Pump Off	4/18/2017	14	:	16	1829.00				14.52	14.52	0.00				
Pump Off	4/19/2017	7	:	28	2861.00				14.53	14.55	0.02				
Pump Off	4/19/2017	10	:	22	3035.00				14.52	14.53	0.01				
Pump Off	4/19/2017	12	:	20	3153.00				14.51	14.53	0.02				
Pump On	4/19/2017	13	:	12	3205.00				14.57	14.57	0.00				
Pump Off	4/19/2017	13	:	14	3207.00	1761.000	59	2070	14.57	14.57	0.00		0.32	0.01	0.0039
Pump Off	4/25/2017	7	:	17	11490.00				14.42	14.44	0.02				
Pump On	4/25/2017	7	:	30	11503.00						0.00				
Pump Off	4/25/2017	7	:	32	11505.00	8298.00	118	2366	14.45	14.45	0.00		0.2	0.01	0.0027
Pump Off	4/25/2017	10	:	7	11660.00				14.52	14.55	0.03				
Pump Off	5/1/2017	7	:	30	20143.00				13.73	13.74	0.01				
Pump On	5/1/2017	7	:	50	20163.00						0				
Pump Off	5/1/2017	7	:	52	20165.00	8660.00	148	1750	13.74	13.74	0		0.2	0.01	0.0032

Appendix C
Manual Skimming Test at MW-414
IRA Completion Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts



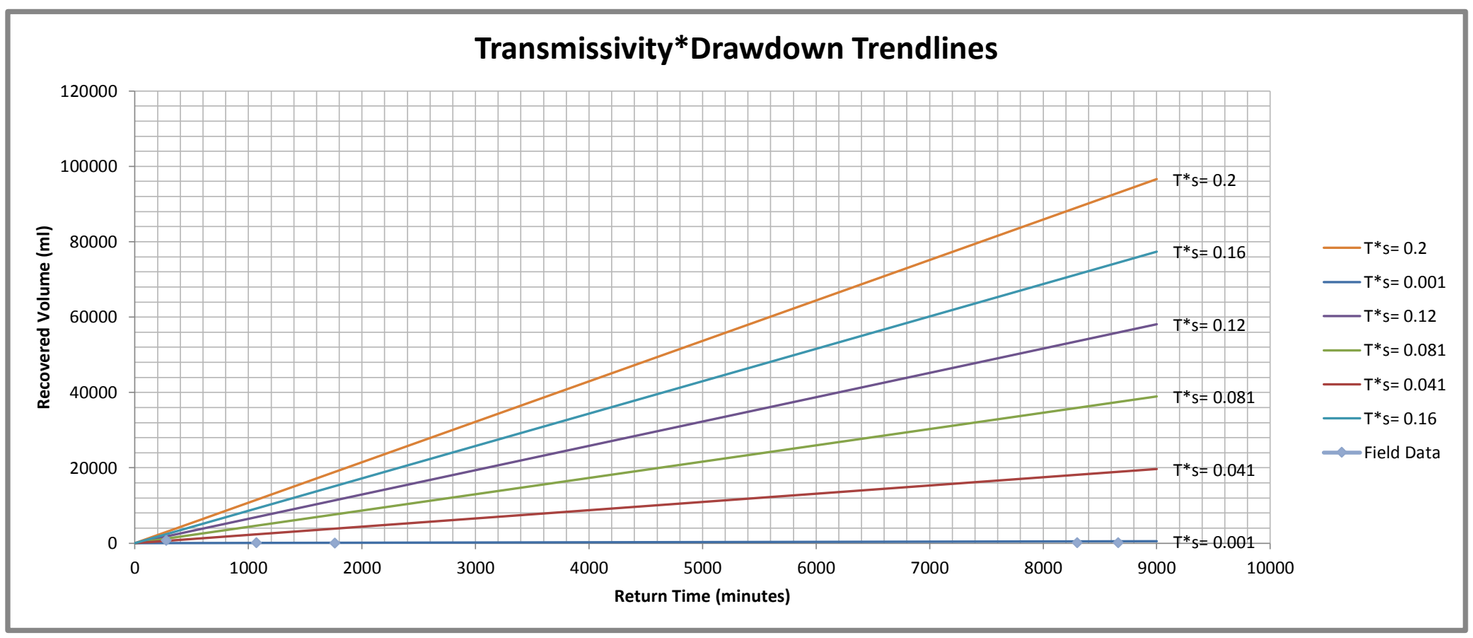


Appendix C
Manual Skimming Test at MW-414
IRA Completion Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

Transmissivity Trendlines Field Data Plotting

Trendline Inputs (Update inputs before field event for estimated site conditions and plot data as collected on trendlines below)			Minimum	Maximum
Ratio (recovery radius/well radius)	10	**Estimated LNAPL Thickness (ft)**	0.01	1
Estimated LNAPL Density (g/cc)	0.9785	**Estimated Drawdown Range (ft)**	0.01	0.2
Maximum Removal Interval (min)	9000	**Estimated Transmissivity Range (ft^2/day)**	0.1	1

Transmissivity*Drawdown Trendlines								
Trendline Title	**Return Time Trendline Start (min)**	**Return Time (minutes)**	**Recovered Volume Trendline Start (ml)**	**Recovered Volume (ml)**	**Recovery Rate (ml/min)**	**Transmissivity (ft^2/day)*drawdown (ft)**	**Estimated Drawdown (ft)**	**Transmissivity (ft^2/day)**
T*s= 0.001	0	9000	0	483	0.05	0.001	0.2	0.005
T*s= 0.041	0	9000	0	19702	2.19	0.041	0.2	0.204
T*s= 0.081	0	9000	0	38922	4.32	0.081	0.2	0.403
T*s= 0.12	0	9000	0	58141	6.46	0.120	0.2	0.602
T*s= 0.16	0	9000	0	77361	8.60	0.160	0.2	0.801
T*s= 0.2	0	9000	0	96580	10.73	0.200	0.2	1



Appendix C
Manual Skimming Test at MW-414
IRA Completion Statement Report
Enbridge
Atlantic Bridge Project
Weymouth Compressor Station
6 Bridge Street, Weymouth, Massachusetts

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APPENDIX D

WASTE MANAGEMENT DOCUMENTATION

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) ~~SB 1703018424-001~~ ~~SC PPW 5/30/2017~~

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ~~MP7818442727~~
2. Page 1 of 2
3. Emergency Response Phone: ~~(800) 483-3718~~
4. Manifest Tracking Number: **010472159 FLE**

5. Generator's Name and Mailing Address:
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: ~~(617) 560-1500~~ ~~ATTN Aaron Landervou~~

Generator's Site Address (if different than mailing address):
ForeRiver Bridge Street
Weymouth, MA 02191

6. Transporter 1 Company Name: ~~Clean Harbors Environmental Services, Inc.~~ — U.S. EPA ID Number: ~~MAD039322250~~

7. Transporter 2 Company Name: Robbie D. Wood Inc — U.S. EPA ID Number: ALD067138391

8. Designated Facility Name and Site Address:
Clean Harbor Chattanooga LLC
3300 Cummings Road
Chattanooga, TN 37419
Facility's Phone: ~~(423) 821-6926~~
U.S. EPA ID Number: TND982141392

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON D.O.T. REGULATED, (WATER, DIESEL FUEL)	1	DM	55	G	MA01
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1186322 (1X55)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Terrance W Doyle — Signature: TW Doyle — Month/Day/Year: 06 19 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Paul Richard — Signature: Paul Richard — Month/Day/Year: 06 19 17
Transporter 2 Printed/Typed Name: Randy Whitten — Signature: [signature] — Month/Day/Year: 6 21 17

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H100			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Doug Kelly — Signature: [signature] — Month/Day/Year: 7 10 17

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

DESIGNATED FACILITY TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SB 1703018424-001 SC PPW 5/30/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	MP7818442727	1	(800) 483-3718	010472157 FLE

GENERATOR

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham. MA 02451
Generator's Phone: (617) 560-1500 ATTN:Aaron Landervou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth,MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors of Braintree Inc
1 Hill Avenue
Braintree. MA 02184
Facility's Phone: (781) 380-7100
U.S. EPA ID Number: MAD053452637

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON DOT REGULATED MATERIAL, (EMPTY DRUM/ LINING NON REGULATED MATERIAL)	15	DF	50	P	MA99
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1457256 (15x5gl EMPTYS IN 2 BAGS)

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERRANCE W Doyle — Signature: TW Doyle — Month 06 Day 19 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: PAUL RICHARD — Signature: [signature] — Month 06 Day 19 Year 17
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: James Cheney — Signature: [signature] — Month 06 Day 19 Year 17

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

EPA Form 8700-22 (Rev. 3-05). Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Run Date: 6/29/2017

Manifest Tracking Report

Manifests generated from 6/19/2017 through 6/19/2017

Mnfst No	Generator EPA Id	Generator Code	Job Site Address	Sales Order	Tran 1	Mnfstd Facility Name	Gen Sign Date	Mnfstd Facility Recd Date	Mnfst Return Days	Weight Ticket
010472157FLE	MP7818442727	AL36414	ForeRiver Bridge Street Weymouth, MA 02191	1703018424-001	Clean Harbors Environmental Services, Inc.	Clean Harbors of Braintree Inc	6/19/2017	6/19/2017	6	
010472159FLE	MP7818442727	AL36414	ForeRiver Bridge Street Weymouth, MA 02191	1703018424-001	Robbie D Wood Incorporated	Clean Harbors Chattanooga LLC	6/19/2017			
010472160FLE	MP7818442727	AL36414	ForeRiver Bridge Street Weymouth, MA 02191	1703018424-001	Robbie D Wood Incorporated	Spring Grove Resource Recovery Inc.	6/19/2017	6/22/2017	7	

819 #5427

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SB 1602412623-001 SC PPW 7/20/2015

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
MP7818442727	1	(800) 483-3718	009739447 FLE

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham. MA 02451
Generator's Phone: (617) 560-1500 ATTN:Aaron Landervou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth,MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Robbie D Wood Inc — U.S. EPA ID Number: A?D06713880

8. Designated Facility Name and Site Address
Clean Harbors Chattanooga LLC
3300 Cummings Road
Chattanooga. TN 37419
Facility's Phone: (423) 821-6926
U.S. EPA ID Number: TND982141392

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON DOT REGULATED MATERIAL, (GROUNDWATER)	X3	DM	150	G	MA99
	2. NON D.O.T. REGULATED, (USED OIL, DIRT & SOLID)	X2	DM	400	P	MA01
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1208334 — 3X55
2.CH769959 — 2X55

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Chris Tope — Signature: [signature] — Month 7 Day 28 Year 16

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Luzinno Vieira — Signature: [signature] — Month 7 Day 28 Year 16
Transporter 2 Printed/Typed Name: Greg Hepp — Signature: [signature] — Month 7 Day 29 Year 16

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Rod Churchwell — Signature: [signature] — Month 8 Day 1 Year 16

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SB 1603589069-001 SC PPW 10/19/2016 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
MP7818442727	1	(800) 483-3718	009740539 FLE

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: (617) 560-1500 ATTN:Aaron Landeroou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth,MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Robbie D. Wood Inc — U.S. EPA ID Number: ALD067138891

8. Designated Facility Name and Site Address — U.S. EPA ID Number: TND982141392
Clean Harbors Chattanooga LLC
3300 Cummings Road
Chattanooga, TN 37419
Facility's Phone: (423) 821-6926

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON D.O.T. REGULATED, (WATER, DIESEL FUEL)	1	DM	40	G	MA01
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1186323 (1X55)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Christopher D. Tyne — Signature: [signature] — Month 11 Day 01 Year 16

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: PAUL RICHARD — Signature: Paul Richard — Month 11 Day 01 Year 16
Transporter 2 Printed/Typed Name: Jim Heater — Signature: [signature] — Month 11 Day 1 Year 16

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H100			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Dug Kim — Signature: [signature] — Month 11 Day 15 Year 16

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. **DESIGNATED FACILITY TO GENERATOR**

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SB 1603589069-001 SC PPW 10/19/2016

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
MP7818442727	1	(800) 483-3718	009740540 FLE

GENERATOR

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: (617) 560-1500 ATTN Aaron Landervou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth, MA 02191

6. Transporter 1 Company Name
Clean Harbors Environmental Service, Inc.
U.S. EPA ID Number
MAD039322250

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Spring Grove Resource Recovery Inc.
4879 Spring Grove Avenue
Cincinnati, OH 45232
Facility's Phone: (513) 681-5738
U.S. EPA ID Number
OHD000816629

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-RCRA HAZARDOUS WASTE, SOLIDS, (USED OIL, DIRT AND SAND)	1	DM	150	P	MA01
	2. NON-RCRA HAZARDOUS WASTE, SOLIDS, (USED OIL, DIRT AND SAND)	1	DM	250	P	MA01
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH713133 (1X55)
2. CH769959 (1X55)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Christopher D. Tope
Signature:
Month: 11 Day: 01 Year: 16

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: PAUL RICHARD
Signature:
Month: 11 Day: 01 Year: 16

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141	H141		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Charity Borzofel
Signature:
Month: 11 Day: 3 Year: 16

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Containers 029750, 029791 Shipment 03891

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SB 1604360745-001 SC PPW 12/12/2016

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: MP7818442727
2. Page 1 of: 1
3. Emergency Response Phone: (800) 483-3718
4. Manifest Tracking Number: 009975344 FLE

GENERATOR

5. Generator's Name and Mailing Address:
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: (617)560-1500 ATTN:Aaron Landervou

Generator's Site Address (if different than mailing address)
Fore River Bridge Street
Weymouth,MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
Clean Harbors Chattanooga LLC
3300 Cummings Road
Chattanooga, TN 37419
Facility's Phone: (423)821-6926
U.S. EPA ID Number: TND982141392

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON D.O.T. REGULATED, (WATER, DIESEL FUEL)	7	DM	385	G	MA01
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1136023 (7X55)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: DAVID BUTLER
Signature:
Month: 12 Day: 29 Year: 16

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only): Port of entry/exit:
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: PAUL RICHARD
Signature:
Month: 12 Day: 29 Year: 16
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☒ Partial Rejection ☐ Full Rejection
18b. Alternate Facility (or Generator) Manifest Reference Number:
U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H100			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Ray Kelly
Signature:
Month: 12 Day: 29 Year: 16

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

DESIGNATED FACILITY TO GENERATOR

SB 1604360745-001 SC PPW 12/12/2016

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: MP7818442727
2. Page 1 of: 1
3. Emergency Response Phone: (800) 483-3718
4. Manifest Tracking Number: 009975345 FLE

GENERATOR

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: (617) 560-1500 ATTN:Aaron Landervou

Generator's Site Address (if different than mailing address)
Fore River Bridge Street
Weymouth, MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Robbie D Wood Inc
U.S. EPA ID Number: ALD067138891

8. Designated Facility Name and Site Address
Spring Grove Resource Recovery Inc.
4879 Spring Grove Avenue
Cincinnati, OH 45232
Facility's Phone: (513) 681-5738
U.S. EPA ID Number: OHD000816629

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-RCRA HAZARDOUS WASTE, SOLIDS, (USED OIL, DIRT AND SAND)	5	DM	1,500	P	MA01
	2. NON-RCRA HAZARDOUS WASTE, SOLIDS, (USED OIL, DIRT AND SAND)	3	DM	1,500	P	MA01
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH713133 5X55
2.CH769959 3X55

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: DAVID Butler
Signature: [signature]
Month: 12 Day: 29 Year: 16

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: PAUL RICHARD
Signature: [signature]
Month: 12 Day: 29 Year: 16

Transporter 2 Printed/Typed Name: John Anderson
Signature: [signature]
Month: 12 Day: 30 Year: 16

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141	H141		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Charity Bongiorno
Signature: [signature]
Month: 1 Day: 3 Year: 17

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

EPA Form 8700-22 (Rev. 3-05). Previous editions are obsolete.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SB 1703018424-001 SC PPW 5/30/2017

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: MP7818442727
2. Page 1 of: 1
3. Emergency Response Phone: (800) 483-3718
4. Manifest Tracking Number: 010472160 FLE

GENERATOR

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: (617) 560-1500 ATTN:Aaron Landervou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth,MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Robert D Wood Inc
U.S. EPA ID Number: PAD087138891

8. Designated Facility Name and Site Address
Spring Grove Resource Recovery Inc.
4879 Spring Grove Avenue
Cincinnati, OH 45232
Facility's Phone: (513) 681-5738
U.S. EPA ID Number: OHD000816629

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON-RCRA HAZARDOUS WASTE, SOLIDS, (USED OIL, DIRT AND SAND)	2	DM	400	P	MA01		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1.CH713133 (2X55)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERRANCE W DOYLE Signature: TW Doyle Month: 06 Day: 19 Year: 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: PAUL RICHARD Signature: Paul Richard Month: 06 Day: 19 Year: 17
Transporter 2 Printed/Typed Name: C R GARRETT Signature: CRG Month: 6 Day: 20 Year: 17

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

18b. Alternate Facility (or Generator) Manifest Reference Number:
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: LaKeshea Mason Signature: Month: 6 Day: 22 Year: 17

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

SB 1701396274-001   SC PPW 1/4/2017

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)   Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number MP7818442727	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 010555514 FLE

GENERATOR

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
Generator's Phone: (617) 560-1500 ATTN:Aaron Landervou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth,MA 02191

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: S.J. TRANSPORT — U.S. EPA ID Number: NJTA07162976

8. Designated Facility Name and Site Address — U.S. EPA ID Number: OHD000816629
Spring Grove Resource Recovery Inc.
4879 Spring Grove Avenue
Cincinnati, OH 45232
Facility's Phone: (513) 681-5738

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-RCRA HAZARDOUS WASTE, SOLIDS, (USED OIL, DIRT AND SAND)	2	DM	500	P	MA01
	2.					
	3.					
	4.					

RECEIVED
APR 7 2017
NORTHEAST REGION
WALTHAM

14. Special Handling Instructions and Additional Information
1.CH713133 (2X55)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Tenana Wilosle — Signature: [signature] — Month 03 Day 23 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: PAUL RICHARD — Signature: [signature] — Month 03 Day 23 Year 17
Transporter 2 Printed/Typed Name: KEN BROWN — Signature: [signature] — Month 3 Day 24 Year 17

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. H141	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Chanty Bergfel — Signature: [signature] — Month 3 Day 27 Year 17

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.   DESIGNATED FACILITY TO GENERATOR

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

containers 032001 & 032001   Shipment 014939

SB 1701396274-001 SC PPW 1/4/2017

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
MPT818442727	1	(800) 483-3718	010555515 FLE

GENERATOR

5. Generator's Name and Mailing Address
Algonquin Gas Transmission
890 Winter Street Suite 300
Waltham, MA 02451
(617) 560-1500 ATTN: Aaron Landervou

Generator's Site Address (if different than mailing address)
ForeRiver Bridge Street
Weymouth, MA 02191

Generator's Phone:

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Kobar D Wood Inc — U.S. EPA ID Number: FLDO7138891

8. Designated Facility Name and Site Address
Clean Harbors Chattanooga LLC
3300 Cummings Road
Chattanooga, TN 37419
Facility's Phone: (423) 821-6926

U.S. EPA ID Number: TND982141392

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON D.O.T. REGULATED, (WATER, DIESEL FUEL)	1	DM	55	G	MA01		
	2.							
	3.							
	4.							

RECEIVED
APR 11 2017
NORTHEAST REGION
WALTHAM

14. Special Handling Instructions and Additional Information
T CH1185329 (ASS)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERRANCE W Doyle — Signature: TW Doyle — Month: 03 Day: 23 Year: 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: PAUL RICHARD — Signature: [signature] — Month: 03 Day: 23 Year: 17

Transporter 2 Printed/Typed Name: John Anderson — Signature: [signature] — Month: 3 Day: 27 Year: 17

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H100			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Rod Churchwell — Signature: [signature] — Month: 3 Day: 29 Year: 17

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR

Container #032059 Shipment 014938