September 22, 2015

Ms. Stacy Ladner
Unit Manager
Division of Oil & Hazardous Waste Facility Regulation
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta ME 04333

Subject: **Second Quarter 2015 Groundwater Monitoring Results**
Orrington Remediation Site
Orrington, Maine

Dear Ms. Ladner:

Enclosed for your information is a report of the **second quarter 2015** groundwater sampling data for the monitoring performed at the Orrington Remediation Site by Sevee & Maher Engineers, Inc. (SME). The groundwater monitoring was performed using the low flow sampling protocols described in the Work Plan submitted July 8, 2010.

This groundwater monitoring report includes data summary tables, a figure showing the well locations sampled, field data sheets, and laboratory analytical reports.

With MEDEP's approval, the third quarter 2015 groundwater monitoring event took place in August 2015 as part of the expanded site-wide sampling event of all groundwater monitoring wells. The results of this third quarter sampling event will still be reported to MEDEP as a stand alone Third Quarter 2015 Groundwater Monitoring report. The fourth quarter 2015 sampling round is scheduled to start on December 7th, 2015 and MEDEP will be notified prior to this field work. If you have any questions please feel free to contact me at 314-281-5947.

Sincerely,

Kathy Zeigler

Kathy Zeigler
Director, Environmental Remediation

Cc: John Beane, DEP
Audrey Snowden, Town Librarian, Town of Orrington
Paul White, Town Manager, Town of Orrington

SME
Sevee & Maher Engineers, Inc.

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September 21, 2015

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Kathryn Zeigler
Director, Environmental Remediation
Mallinckrodt US LLC
444 McDonnell Boulevard
Hazelwood, Missouri 63042

Subject: Transmittal of the Second Quarter 2015 Groundwater Quality Sampling Results
Orrington Remediation Site, Orrington, Maine

Dear Ms. Zeigler:

Enclosed are the groundwater quality results from the June 2015 second quarter sampling event at the Orrington Remediation Site in Orrington, Maine (Site). Groundwater samples were obtained from 25 monitoring wells located in the vicinity of the southwestern portion of the Site (Ferry Road Area), the former Manufacturing Area, Landfill 1 Area, Landfill 3, Landfill 4 and Landfill 5. The locations of the wells are identified in the attached Figure 1. Low-flow sampling protocols consistent with procedures requested by the Maine Department of Environmental Protection (MEDEP) in September 2010 were utilized to obtain unfiltered groundwater samples. Sevee & Maher Engineers, Inc. (SME) also obtained water samples from two residences (Haseltine and Safian) on Ferry Road that are routinely tested during the quarterly sampling events. The water samples from the residential property were obtained using the methods consistent with the previous quarterly sampling events. Monitoring well B-303-O1 could not be sampled during the June 2015 round because of an insufficient amount of available water in the well. An influent sample from the Landfill 1 Area extraction well system was also obtained at the onsite water treatment plant for analysis.

Groundwater quality results are summarized in attached Tables 1 through 7. Katahdin Analytical Services (Katahdin) laboratory reports for the June 2015 sampling event are in the attachments to this letter. Field data sheets completed at each well sampled are also included in the attachments to this transmittal.

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QUALITY CONTROL REVIEW

The analytical laboratory provided a technical narrative summarizing the laboratory quality control (QC) for the organics analysis that was incorporated into each of their analytical report deliverables. There were no significant protocol deviations noted by Katahdin for the samples analyzed for the June 2015 sampling event with the exception of the influent sample from the interim extraction well system, which is discussed later in this report. Groundwater analytical results were evaluated to their Practical Quantitation Limits (PQLs). Parameters not detected above the specified PQLs were flagged by Katahdin with a "U" data qualifier on the laboratory analytical reports.

The QC data reviewed in the analytical laboratory reports had acceptable data quality for the June 2015 second quarter sampling round. Method and preparation blanks (for volatile organics, and metals and inorganics, respectively), laboratory control samples (LCS), matrix spikes (MS), matrix spike duplicates (MSD), and surrogate compound recoveries for the laboratory analyses were evaluated. Except for trace concentrations (i.e., less than the PQL) of iron, sodium and alkalinity detected in the laboratory preparation blanks associated with the treatment plant influent sample, no other detectable volatiles, metals or inorganic parameters were present in the method or preparation blanks. The three trace detections in the preparation blanks were of no consequence to the influent sample results because: (1) iron was not detected, and (2) the sodium and alkalinity concentrations detected sufficiently exceeded the blank action level that no data qualification was warranted.

Eight LCS spiked volatile organic compounds (VOCs) reported among three LCSs were outside their respective laboratory recovery QC limits. Only one of these VOCs, a chloromethane detection associated with the influent groundwater sample from with the interim extraction wells, was qualified. The concentration of chloromethane in the influent sample was considered an estimated value because of a potential high bias in the LCS recovery, as indicated in Table 6. Regardless, the chloromethane concentration in the June 2015 sampling round was within the range of values detected in previous quarterly sampling rounds.

Surrogate recoveries for VOCs were within the QC acceptance limits, except for the analysis of the interim extraction wells influent sample. The influent sample was diluted, which achieved an acceptable surrogate as reported by the laboratory. A detection of carbon tetrachloride in the influent sample exceeded the upper limit of calibration during its initial analysis. The sample was diluted to bring the result within the calibrated range of the instrumentation. Concentration differences between undiluted and diluted results for carbon tetrachloride, chloroform and chloromethane reported by the laboratory were likely attributed to the presence of chloropicrin in the influent sample, which can break down into these three VOCs (see Katahdin technical narrative for the influent sample in laboratory report SI4058).

The analytical laboratory noted that the recovery of a mercury-spiked MS/MSD pair associated with one of the Landfill 1 Area groundwater samples was outside the laboratory's acceptance range. This result was not considered significant based on information reviewed in the National Functional Guidelines[1] because the mercury concentration in the sample was more than four times greater than the concentration of the mercury spike. The analytical signal of the mercury spike often cannot be distinguished from the sample's analytical signal when the concentrations are significantly different. Therefore, this MS/MSD result has no effect on the data quality of the mercury result.

The sampling process and field and sample transport conditions were evaluated in laboratory-supplied trip blanks, and in field blanks and duplicate groundwater samples that were obtained in the field during the June 2015 sampling round. VOCs and chloropicrin were not detected in any of the trip blanks (Table 7). Three field blanks associated with the former Manufacturing Area, Landfill 1 Area, and Landfill 5 were prepared with laboratory-supplied deionized water and analyzed for the parameters tested in these areas. No parameters were detected in the field blanks.

Sampling and analytical precision was evaluated in five duplicate groundwater sample pairs submitted for laboratory analysis. Relative percent differences (RPDs) were calculated in the duplicate sample pairs for detections of organic constituents that were equal to or greater than twice the sample quantitation limit and for inorganics equal to or exceeding five times their sample quantitation limit. Parameters detected in the duplicate groundwater sample pairs met acceptable RPD criteria of less than 30 percent. Analytical results for the field duplicate samples exhibited satisfactory precision for the June 2015 second sampling event.

LABORATORY ANALYTICAL RESULTS

Mercury was detected in 12 of the 25 monitoring wells sampled at the Orrington Remediation Site during the June 2015 sampling round, which is typical for the quarterly sampling round. Concentrations of mercury ranged from 0.00055 to 0.33 milligrams per liter (mg/L) in these wells. The Site's Media Protection Standard (MPS) for mercury (0.002 mg/L) was exceeded in eight monitoring wells. The concentration of mercury detected in six of the eight wells was lower in the June 2015 round compared to the previous sampling round in March 2015. The highest mercury concentrations in the groundwater beneath the Landfill 1 Area continues to be detected in monitoring well MW-501-O1 near the Lined Process Lagoon, and at the downgradient margin of the Landfill 1 Area in B-326-03. Mercury concentrations in three Landfill 1 Area interim extraction wells in the vicinity of B-326-03; i.e., EW-1, EW-4 and

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[1] *National Functional Guidelines for Inorganic Superfund Data Review*, Office of Superfund Remediation and Technology Innovation; U.S. EPA, Washington, DC; January 2010.

MW-601, were detected at similar concentrations to B-326-03 as referenced in the June Interim Extraction System summary report prepared by SME dated July 23, 2015.

In the former Manufacturing Area, monitoring well MW-510-O1 located downgradient from the former salt storage pad routinely has had greater concentrations of mercury than the other two nearby wells (MW-502-O1 and MW-503-O1) based on previous results from quarterly sampling rounds. This pattern was evident again during the June 2015 sampling round as MW-510-O1 contained mercury (0.00421 mg/L) at a concentration greater than the MPS. The mercury concentration in MW-510-O1 was about 60 percent less than the value detected in the March 2015 water quality results. The mercury concentrations detected in MW-502-O1 (0.00055 mg/L) and MW-503-O1 (0.00143 mg/L) were both less than the MPS, and have been most of the time since 2007 and 2009, respectively.

Groundwater quality associated with Landfills 3, 4 and 5 is monitored along the ridge area north of the former Manufacturing Area. Mercury is monitored directly beneath Landfill 4 in MW-506-B1, which has had greater concentrations (exceeding the MPS) compared to the other wells in the area that are sampled quarterly. Less than MPS mercury concentrations were detected in the groundwater moving southerly downgradient of Landfills 3 and 4, in monitoring wells MW-410-B1 (0.0015 mg/L) and P-2A (0.0018 mg/L). Mercury was not detected in the northerly flowing groundwater near Landfills 3 and 4 (B-309-B1 and P-13), or in the monitoring wells sampled around Landfill 5 in June 2015. Consistent with previous quarterly monitoring, detectable mercury was not present in the southwestern portion of the Site between the former Manufacturing Area and Ferry Road. The two residential wells on Ferry Road also did not contain detectable mercury, which is typical for the water quality at these two locations.

Groundwater samples obtained from MW-501-O1 near the downgradient side of the Lined Process Lagoon in the Landfill 1 Area, and from MW-502-O1, MW-503-O1 and MW-510-O1 in the former Manufacturing Area were analyzed for chloropicrin consistent with quarterly monitoring. Chloropicrin was not detected in any of these four wells during the June 2015 sampling round. Generally, low concentrations of chloropicrin (less than the MPS of 30 µg/L) are detected at times in MW-510-O1. Chloropicrin has rarely been detected in the other three wells since the mid-2000s.

VOCs were analyzed in groundwater samples obtained from monitoring wells in the former Manufacturing Area and around Landfills 3, 4 and 5. Four different organic compounds were detected during the June 2015 sampling round; i.e., carbon tetrachloride, chloroform, trichloroethene and dichlorodifluoromethane, which were distributed among eight monitoring wells. Carbon tetrachloride exceeded its MPS of 3 µg/L in groundwater from MW-506-B1 (9.4 µg/L), screened beneath the middle of Landfill 4, and in MW-410-B1 (40 µg/L) and P-2A (9.1 µg/L) downgradient of Landfills 3 and 4. Detectable concentrations of chloroform,

trichloroethene and dichlorodifluoromethane were less than their MPS, or the Maine Maximum Exposure Guideline (MEG) if an MPS does not exist for the compound.

An influent sample of groundwater from the combined flow from the Landfill 1 Area interim extraction wells (MW-601, EW-1, EW-2, EW-3, and EW-4) was obtained at the on-site groundwater treatment plant and submitted to the laboratory for analysis of a suite of parameters. Analytical results for the influent sample are summarized in Table 6. Mercury, VOCs, and chloropicrin concentrations in the influent sample were within the historical range of groundwater quality associated with the Landfill 1 Area and recent effluent testing.

GROUNDWATER QUALITY SUMMARY

A comparison of the June 2015 second quarter sample parameter results to the Site MPS indicated the following groundwater quality:

- Landfill 1 Area – The MPS for mercury (0.002 mg/L) was exceeded in monitoring wells B-326-O2, B-326-O3, MW-402-O1, MW-501-O1, MW-512-O1 and MW-513-O1 (0.0063 to 0.33 mg/L). The mercury concentrations detected in four of the six wells had decreased compared to the previous quarter in March 2015.

- Former Manufacturing Area – Mercury was detected in MW-510-O1 (0.00421 mg/L) at a concentration greater than the MPS; although, the concentration had decreased since the March 2015 sampling quarter.

- Landfills 3 and 4 – The MPS for mercury was exceeded in the groundwater obtained from beneath Landfill 4 in MW-506-B1 (0.011 mg/L); although not in downgradient monitoring wells MW-410-B1 and P-2A near Landfills 3 and 4. Carbon tetrachloride was detected in MW-506-B1 (9.4 µg/L), MW-410-B1 (40 µg/L) and P-2A (9.1 µg/L) at concentrations greater than the MPS (3 µg/L). The mercury concentration in MW-506-B1 was less than detected in the March 2015 sampling round, while the carbon tetrachloride results were consistent with the previous quarter.

- Landfill 5 – Detectable mercury was not present in the groundwater in this part of the Site during the June 2015 sampling event, which is consistent with the water quality record of the wells monitored surrounding Landfill 5.

- Ferry Road Area and Residential Wells – Mercury was not detected in the southwestern part of the Site or in the two residential wells sampled on Ferry Road.

WATER LEVEL MONITORING

The water levels measured during the June 2015 sampling round averaged less than a 1-foot increase in groundwater elevation across the Site compared to the previous quarter in March 2015. Greater increases in groundwater elevation were associated with the monitoring wells located in the higher topography of the landfill ridge area, a pattern that was consistent with the historical groundwater monitoring history of the Site. Less increase in groundwater elevation change between March and June 2015 was found in the Ferry Road Area and Landfill 1 Area wells, many of which are affected daily by tidally-influenced fluctuations from the nearby Penobscot River. Most of the Ferry Road Area and Landfill 1 Area wells were sampled during a low tide period during both the March and June 2015 sampling rounds.

The three-month period prior to the June 2015 sampling round was characterized by below normal precipitation based on a review of data obtained from the on-site weather station and the Bangor International Airport, located about 4 miles north of the Orrington Remediation Site).[2] Abnormally dry conditions were also reported in the region of Maine where the Orrington Remediation Site is located, according to the U.S. Drought Monitor.[3] Regardless, over 2 inches more of rain was recorded at the on-site weather station during the three-month period preceding the June 2015 sampling quarter compared to the March 2015 round, which likely contributed to the slightly higher groundwater levels across the Site. Overall, the June 2015 groundwater levels were not much different from the groundwater elevations measured a year ago during the June 2014 sampling round.

SCHEDULE FOR FUTURE MONITORING

The date for the third quarter 2015 groundwater sampling event at the Orrington Remediation Site was rescheduled following MEDEP approval from its usual month (September 2015) to accommodate an expanded sampling round, which will be used to evaluate the current site-wide water quality. The schedule for the third quarter sampling round was moved up, and conducted during the week of August 3, 2015. The results of the third quarter August 2015 sampling round will be forthcoming in a separate water quality transmittal. The fourth quarter sampling round is scheduled to start on December 7, 2015. In addition to the routine monitoring, groundwater samples will also be obtained from the five interim groundwater extraction wells that are operating in the Landfill 1 Area. MEDEP will be notified about the

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[2] *Record of Climatological Observations, Bangor International Airport, ME.* National Climatic Data Center Federal Building, Asheville, North Carolina, (http://www.ncdc.noaa.gov), accessed August 14, 2015.

[3] *U.S. Drought Monitor*, (http://droughtmonitor.unl.edu), accessed August 25, 2015.

schedule prior to the sampling event. If you have any questions concerning the June 2015 groundwater quality results, please do not hesitate to contact Bill Metzger or me.

Very truly yours,

SEVEE & MAHER ENGINEERS, INC.

John E. Sevee, P.E., C.P.G.

Attachments:

Figure 1 – Well Locations
Groundwater Monitoring Results Summary - Tables 1 through 7
Data Tables
Relative Percent Difference for Duplicate Samples
Field Data Sheets
Laboratory Analytical Reports

WELL LOCATIONS
FIGURE 1

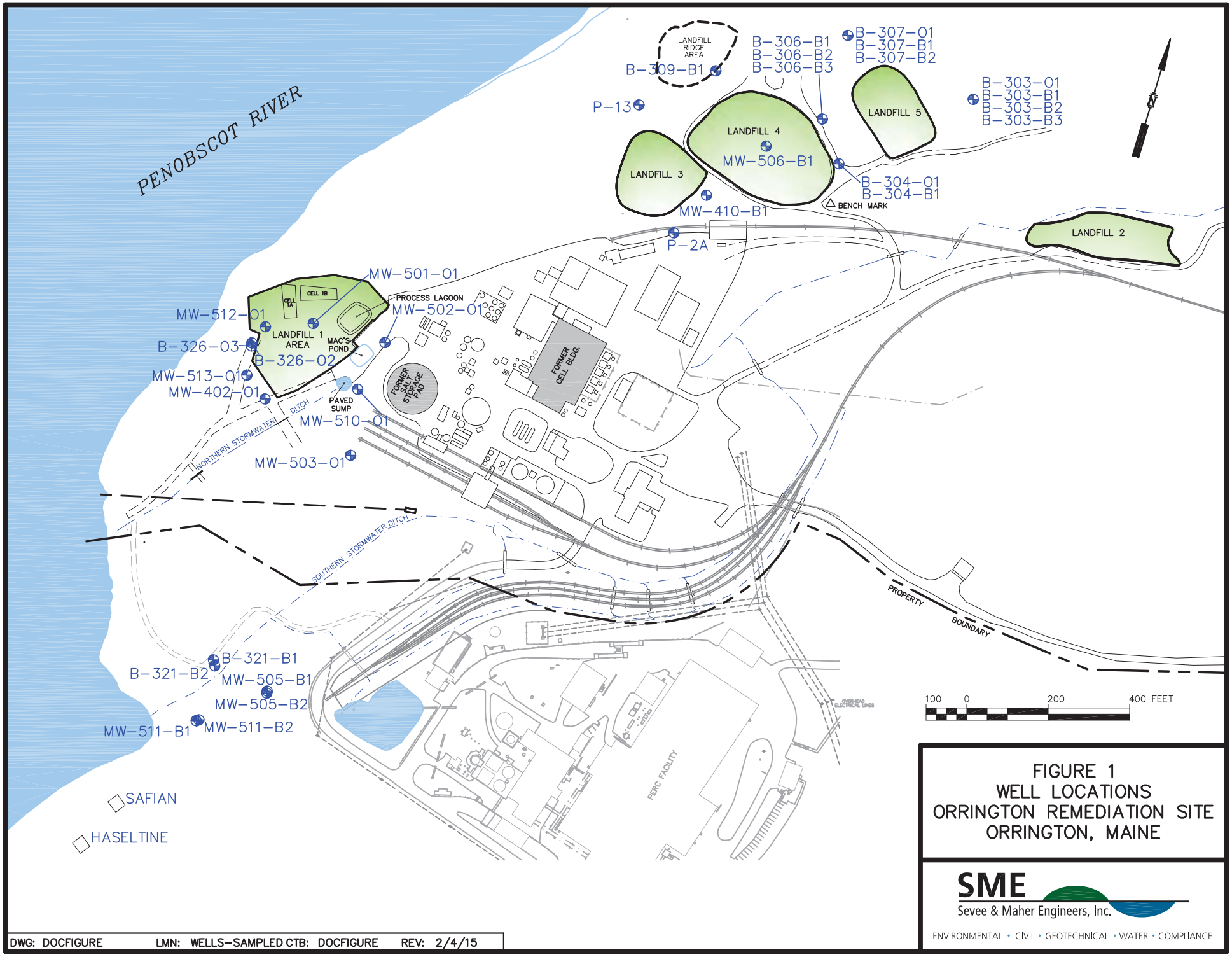

FIGURE 1
WELL LOCATIONS
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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DWG: DOCFIGURE LMN: WELLS-SAMPLED CTB: DOCFIGURE REV: 2/4/15

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GROUNDWATER MONITORING RESULTS SUMMARY
TABLES 1 THROUGH 7

TABLE 1
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Parameters	Ferry Road Monitoring Well Locations								
	Haseltine	Safian	(DUP-2) Safian	B-321-B1	B-321-B2	MW-505-B1	MW-505-B2	MW-511-B1	MW-511-B2
	06/09/15	06/09/15	06/09/15	06/08/15	06/08/15	06/08/15	06/08/15	06/08/15	06/08/15
Mercury (mg/L)	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chloride (mg/L)	1,500	1,500	620	1,800	800	3,500	2,600	3,000	2,800
Specific Conductance (µS/cm @25°C)	4,754	NA	2,228	5,583	3,000	9,825	7,914	8,661	8,051
pH (Standard Units)	7.4	NA	7.2	7.12	7.33	7.05	7.1	7.04	7.09
Temperature (Degrees Celcius)	10.2	NA	13.6	9.1	9.2	8.7	8.6	9.1	8.9
Salinity (g/L)	2.62	NA	0.11	3.11	1.61	5.71	4.52	4.98	4.61
Turbidity (field) (NTU)	0.4	NA	1.9	1.5	0.5	0.1	0.1	0.2	0.05
Dissolved Oxygen (mg/L)	5.5	NA	1.5	0.8	1.4	0.4	0.6	0.2	0.5
VOCs									
Acetone (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyltertiarybutylether (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichlorethene (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloropicrin (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA

Qualifiers:

NA = Parameter was not analyzed

< = Not detected above the reported sample detection limit

TABLE 2
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Former Manufacturing Area Monitoring Well Locations					
Parameters	MW-502-O1	MW-503-O1	MW-510-O1	(DUP-4) MW-510-O1	(FB-1) Field Blank
	06/10/15	06/10/15	06/10/15	06/10/15	06/10/15
Mercury (mg/L)	0.00055	0.00143	0.00421	0.00427	< 0.0002
Specific Conductance (µS/cm @25°C)	1,674	997	69,778	NA	NA
pH (Standard Units)	7.77	7.63	7.4	NA	NA
Temperature (Degrees Celcius)	15.3	12.9	14.4	NA	NA
Salinity (g/L)	0.87	0.51	49.46	NA	NA
Turbidity (field) (NTU)	0.1	5.1	0.9	NA	NA
Dissolved Oxygen (mg/L)	5.3	8.7	1.1	NA	NA
VOCs					
Acetone (µg/L)	< 5	< 5	< 5	< 5	< 5
Chloroform (µg/L)	2.1	< 1	10	9.1	< 1
Carbon Tetrachloride (µg/L)	< 1	< 1	< 1	< 1	< 1
Benzene (µg/L)	< 1	< 1	< 1	< 1	< 1
Toluene (µg/L)	< 1	< 1	< 1	< 1	< 1
Ethylbenzene (µg/L)	< 1	< 1	< 1	< 1	< 1
Carbon Disulfide (µg/L)	< 1	< 1	< 1	< 1	< 1
o-Xylene (µg/L)	< 1	< 1	< 1	< 1	< 1
m,p-Xylene (µg/L)	< 2	< 2	< 2	< 2	< 2
Methyltertiarybutylether (µg/L)	< 1	< 1	< 1	< 1	< 1
Trichloroethene (µg/L)	< 1	< 1	< 1	< 1	< 1
Naphthalene (µg/L)	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethene (µg/L)	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane (µg/L)	< 1	< 1	< 1	< 1	< 1
Tetrachloroethene (µg/L)	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane (µg/L)	< 1	< 1	< 1	< 1	< 1
Bromoform (µg/L)	< 1	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane (µg/L)	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane (µg/L)	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichlorethene (µg/L)	< 1	< 1	< 1	< 1	< 1
Chloroethane (µg/L)	< 2	< 2	< 2	< 2	< 2
Chloromethane (µg/L)	< 2	< 2	< 2	< 2	< 2
Bromomethane (µg/L)	< 2	< 2	< 2	< 2	< 2
Dichlorodifluoromethane (µg/L)	< 2	< 2	4	3.6	< 2
Chloropicrin - SW8011M (µg/L)	< 2	< 1.9	< 1.9	< 1.9	< 2
Chloropicrin - 551.1 (µg/L)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Qualifiers:

NA = Parameter was not analyzed

< = Not detected above the reported sample detection limit

TABLE 3
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Landfill 1 Area Monitoring Well Locations								
Parameters	B-326-O2	(DUP-1) B-326-O2	B-326-O3	MW-402-O1	MW-501-O1	MW-512-O1	MW-513-O1	(FB-2) Field Blank
	06/09/15	06/09/15	06/09/15	06/09/15	06/09/15	06/09/15	06/09/15	06/09/15
Mercury (mg/L)	0.0216	0.0216	0.0589	0.00632	0.33	0.00654	0.0087	< 0.0002
Chloride (mg/L)	320	340	91	620	NA	110	260	< 2
Specific Conductance (µS/cm @25°C)	1,392	NA	666	2,451	1,329	706	1,176	NA
pH (Standard Units)	7.2	NA	6.87	7.44	6.97	7	7.31	NA
Temperature (Degrees Celcius)	9.6	NA	9.6	9.5	11.6	10.3	10.8	NA
Salinity (g/L)	0.72	NA	0.33	1.3	0.68	0.36	0.6	NA
Turbidity (field) (NTU)	0.1	NA	0.1	0.2	1.2	0.1	0.2	NA
Dissolved Oxygen (mg/L)	7.1	NA	5.2	7.3	5.9	7.6	7.4	NA
VOCs								
Acetone (µg/L)	NA	NA	NA	NA	< 5	NA	NA	NA
Chloroform (µg/L)	NA	NA	NA	NA	2.2	NA	NA	NA
Carbon Tetrachloride (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Benzene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Toluene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Ethylbenzene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Carbon Disulfide (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
o-Xylene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
m,p-Xylene (µg/L)	NA	NA	NA	NA	< 2	NA	NA	NA
Methyltertiarybutylether (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Trichloroethene (µg/L)	NA	NA	NA	NA	3.8	NA	NA	NA
Naphthalene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
1,1-Dichloroethene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Dibromochloromethane (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Tetrachloroethene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Bromodichloromethane (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Bromoform (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
1,1,1-Trichloroethane (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
1,1,2-Trichloroethane (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
cis-1,2-Dichlorethene (µg/L)	NA	NA	NA	NA	< 1	NA	NA	NA
Chloroethane (µg/L)	NA	NA	NA	NA	< 2	NA	NA	NA
Chloromethane (µg/L)	NA	NA	NA	NA	< 2	NA	NA	NA
Bromomethane (µg/L)	NA	NA	NA	NA	< 2	NA	NA	NA
Dichlorodifluoromethane (µg/L)	NA	NA	NA	NA	< 2	NA	NA	NA
Chloropicrin - SW8011M (µg/L)	NA	NA	NA	NA	< 1.9	NA	NA	NA
Chloropicrin - 551.1 (µg/L)	NA	NA	NA	NA	< 0.5	NA	NA	NA

Qualifiers:

NA = Parameter was not analyzed

< = Not detected above the reported sample detection limit

TABLE 4
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Landfills 3 & 4 Monitoring Well Locations						
Parameters	B-309-B1	MW-410-B1	MW-506-B1	P-2A	P-13	(DUP-5) P-13
	06/09/15	06/09/15	06/09/15	06/09/15	06/09/15	06/09/15
Mercury (mg/L)	< 0.0002	0.0015	0.0111	0.0018	< 0.0002	< 0.0002
Specific Conductance (µS/cm @25°C)	614	752	1331	816	296	NA
pH (Standard Units)	8.11	7.29	7.04	7	7.55	NA
Temperature (Degrees Celcius)	10.2	10	12	9	8.6	NA
Salinity (g/L)	0.31	0.38	0.69	0.41	0.15	NA
Turbidity (field) (NTU)	0.4	0.1	0.6	0.2	0.2	NA
Dissolved Oxygen (mg/L)	1.7	3.8	3.7	6.3	8.5	NA
VOCs						
Acetone (µg/L)	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform (µg/L)	< 1	11	2.6	9.3	< 1	< 1
Carbon Tetrachloride (µg/L)	1.6	40	9.4	9.1	< 1	< 1
Benzene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Toluene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Disulfide (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
o-Xylene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
m,p-Xylene (µg/L)	< 2	< 2	< 2	< 2	< 2	< 2
Methyltertiarybutylether (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Naphthalene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichlorethene (µg/L)	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane (µg/L)	< 2	< 2	< 2	< 2	< 2	< 2
Chloromethane (µg/L)	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane (µg/L)	< 2	< 2	< 2	< 2	< 2	< 2
Dichlorodifluoromethane (µg/L)	< 2	< 2	< 2	< 2	< 2	< 2
Chloropicrin (µg/L)	NA	NA	NA	NA	NA	NA

Qualifiers:

NA = Parameter was not analyzed

< = Not detected above the reported sample detection limit

TABLE 5
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Landfill 5 Monitoring Well Locations								
Parameters	B-303-B1	B-303-B2	B-303-B3	B-303-O1	B-306-B1	(DUP-3) B-306-B1	B-306-B2	(FB-3) Field Blank
	06/08/15	06/08/15	06/08/15	06/08/15	06/08/15	06/08/15	06/08/15	06/08/15
Mercury (mg/L)	< 0.0002	< 0.0002	< 0.0002	I	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chloride (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Phenolics (ug/L)	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
Specific Conductance (µS/cm @25°C)	162	150	149	I	1,996	NA	1,680	NA
pH (Standard Units)	7.75	7.5	7.12	I	8.61	NA	7.5	NA
Temperature (Degrees Celcius)	8.5	7.7	8.4	I	9	NA	8.5	NA
Salinity (g/L)	0.08	0.19	0.08	I	1.05	NA	0.87	NA
Turbidity (field) (NTU)	< 0.05	< 0.05	0.1	I	0.2	NA	0.1	NA
Dissolved Oxygen (mg/L)	10	10.1	7.4	I	0.2	NA	4.8	NA
Iron (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
Sodium (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA
VOCs								
Acetone (µg/L)	< 5	< 5	< 5	I	< 5	< 5	< 5	< 5
Chloroform (µg/L)	< 1	< 1	< 1	I	1.5	1.5	< 1	< 1
Carbon Tetrachloride (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Benzene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Toluene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Ethylbenzene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Carbon Disulfide (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
o-Xylene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
m,p-Xylene (µg/L)	< 2	< 2	< 2	I	< 2	< 2	< 2	< 2
Methyltertiarybutylether (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Trichloroethene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Naphthalene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
1,1-Dichloroethene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Dibromochloromethane (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Tetrachloroethene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Bromodichloromethane (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
Bromoform (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 1
cis-1,2-Dichlorethene (µg/L)	< 1	< 1	< 1	I	< 1	< 1	< 1	< 2
Chloroethane (µg/L)	< 2	< 2	< 2	I	< 2	< 2	< 2	< 2
Chloromethane (µg/L)	< 2	< 2	< 2	I	< 2	< 2	< 2	< 2
Bromomethane (µg/L)	< 2	< 2	< 2	I	< 2	< 2	< 2	< 2
Dichlorodifluoromethane (µg/L)	< 2	< 2	< 2	I	< 2	< 2	< 2	< 2
Chloropicrin (µg/L)	NA	NA	NA	NA	NA	NA	NA	NA

Abbreviations:

I = The location yielded insufficient quantity of water to collect a sample.

NA = Parameter was not analyzed

< = Not detected above the reported sample detection limit

TABLE 6
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Groundwater Treatment Plant	
Parameters	**Influent**
	06/10/15
Mercury (mg/L)	0.0265
Chloride (mg/L)	260
Sulfate (mg/L)	24
Alkalinity (mg/L as $CaCO_3$)	140
Specific Conductance (µS/cm @25°C)	1,152
pH (Standard Units)	7.15
Temperature (Degrees Celcius)	11.3
Salinity (g/L)	0.59
Turbidity (field) (NTU)	2.9
Dissolved Oxygen (mg/L)	7.3
Iron (mg/L)	< 0.1
Manganese (mg/L)	0.047
Sodium (mg/L)	169
VOCs	
Acetone (µg/L)	< 5
Chloroform (µg/L)	7.4
Carbon Tetrachloride (µg/L)	78
Benzene (µg/L)	< 1
Toluene (µg/L)	< 1
Ethylbenzene (µg/L)	< 1
Carbon Disulfide (µg/L)	< 1
o-Xylene (µg/L)	< 1
m,p-Xylene (µg/L)	< 2
Methyltertiarybutylether (µg/L)	< 1
Trichloroethene (µg/L)	1.5
Naphthalene (µg/L)	< 1
1,1-Dichloroethene (µg/L)	< 1
Dibromochloromethane (µg/L)	< 1
Tetrachloroethene (µg/L)	< 1
Bromodichloromethane (µg/L)	< 1
Bromoform (µg/L)	< 1
1,1,1-Trichloroethane (µg/L)	< 1
1,1,2-Trichloroethane (µg/L)	< 1
cis-1,2-Dichlorethene (µg/L)	< 1
Chloroethane (µg/L)	< 2
Chloromethane (µg/L)	28 J+
Bromomethane (µg/L)	< 2
Dichlorodifluoromethane (µg/L)	< 2
Chloropicrin - SW8011M (µg/L)	6,600
Chloropicrin - 551.1 (µg/L)	6,100

Abbreviations:

< = Not detected above the reported sample detection limit

J + = Indicates an estimated concentration due to potential high bias resulting from LCS compound recovery greater than the upper QC acceptance criteria

TABLE 7
SECOND QUARTER JUNE 2015
GROUNDWATER MONITORING RESULTS

Trip Blanks				
Parameters	**QCBT (41A)**	**QCBT (419)**	**QCBT (477)**	**QCBT (41B)**
	06/08/15	**06/09/15**	**06/09/15**	**06/10/15**
VOCs				
Acetone (µg/L)	< 5	< 5	NA	< 5
Chloroform (µg/L)	< 1	< 1	NA	< 1
Carbon Tetrachloride (µg/L)	< 1	< 1	NA	< 1
Benzene (µg/L)	< 1	< 1	NA	< 1
Toluene (µg/L)	< 1	< 1	NA	< 1
Ethylbenzene (µg/L)	< 1	< 1	NA	< 1
Carbon Disulfide (µg/L)	< 1	< 1	NA	< 1
o-Xylene (µg/L)	< 1	< 1	NA	< 1
m,p-Xylene (µg/L)	< 2	< 2	NA	< 2
Methyltertiarybutylether (µg/L)	< 1	< 1	NA	< 1
Trichloroethene (µg/L)	< 1	< 1	NA	< 1
Naphthalene (µg/L)	< 1	< 1	NA	< 1
1,1-Dichloroethene (µg/L)	< 1	< 1	NA	< 1
Dibromochloromethane (µg/L)	< 1	< 1	NA	< 1
Tetrachloroethene (µg/L)	< 1	< 1	NA	< 1
Bromodichloromethane (µg/L)	< 1	< 1	NA	< 1
Bromoform (µg/L)	< 1	< 1	NA	< 1
1,1,1-Trichloroethane (µg/L)	< 1	< 1	NA	< 1
1,1,2-Trichloroethane (µg/L)	< 1	< 1	NA	< 1
cis-1,2-Dichlorethene (µg/L)	< 1	< 1	NA	< 1
Chloroethane (µg/L)	< 2	< 2	NA	< 2
Chloromethane (µg/L)	< 2	< 2	NA	< 2
Bromomethane (µg/L)	< 2	< 2	NA	< 2
Dichlorodifluoromethane (µg/L)	< 2	< 2	NA	< 2
Chloropicrin - SW8011M (µg/L)	NA	NA	< 1.9	NA
Chloropicrin - 551.1 (µg/L)	NA	< 0.5	NA	NA

Abbreviations:
NA = Parameter was not analyzed
< = Not detected above the reported sample detection limit