



City of Bothell™

October 1, 2019

Jerome Cruz, Ecology Site Manager  
Department of Ecology,  
Northwest Regional Office Toxic Cleanup Program  
3190 160<sup>th</sup> Avenue SE  
Bellevue, Washington 98008-5452

**Re: Quarterly Progress Report #6**

Reporting Period: July 1 – Sept 30, 2019

Site Names: **BOTHELL LANDING**  
**BOTHELL PAINT & DECORATING**  
**BOTHELL FORMER HERTZ**

**Summary:**

City of Bothell continues to implement the Cleanup Action Plans for the afore-mentioned sites as part of the Agreed Orders between the City and the Department of Ecology. Per the requirements of Section VII of the Agreed Orders “Work to be Performed”, the attached quarterly progress reports (QPRs) have been prepared for the three-month period preceding this submittal.

Kane Environmental continues to conduct the quarterly groundwater monitoring for all three sites. Work on the environmental covenants (EC) continued to be coordinated by the respective legal staff at Ecology and City.

Please contact me if you have any questions.

Sincerely,

Nduta Mbuthia

Public Works Department  
18415 101<sup>st</sup> Ave NE  
Bothell, WA 98011  
425.806.6800

Reporting Period: Jul 1 – Sep 30, 2019  
 Date submitted (electronically): Oct 1, 2019  
 Date mailed (certified w/return receipt): October 2019  
 Prepared by: Nduta Mbuthia, Project Coordinator  
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- A. A list of on-site activities that have taken place during the reporting period;
- B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;
- C. Description of all deviations from Schedule (Exhibit D) during the current reporting period
- D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule
- E. All raw data (including laboratory analyses) received by PLP during the past reporting period and an identification of the source of the sample; and
- F. A list of deliverables for the upcoming reporting period if different from the schedule.

Site Name: **BOTHELL LANDING**  
 Agreed Oder No.:15746, Effective date June 11, 2018

**A. A list of on-site activities that have taken place during this quarter**

The following on-site activity has occurred this quarter: - Groundwater compliance monitoring for the summer quarter was performed in July/Aug 2019. Sampling results are attached.

**B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests**

As noted/discussed in the previous QPR, three analytes were added to the groundwater sampling based on discussions with the site manager in February.

**C. Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter**

There has been a deviation from the schedule this quarter with regard to:-

Finalizing the Environmental Covenants (ECs) for the site – the City’s consultant attorney and the AAG are still working on finalizing the ECs. After the ECs are finalized, the next step will be to record the ECs after obtaining all the grantee signatures.

**D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule**

None

**E. All raw data (including laboratory analyses) received by Defendants during the past quarter and an identification of the source of the sample**

Groundwater compliance monitoring (2019) was conducted per the CMP Table 3-1B (as modified below). A tabulation of the sampling results is attached.

**Table 3-1B**  
**Sampling Approach – Ground Water**  
**SUBSEQUENT ROUNDS**

Sample type	Sampling location	Sampling Frequency / Rationale	Analytes
<b>Arsenic</b>			
Point of compliance	BLMW-11 BLMW-12 MW-1	Quarterly for two years, then modify based on results and consultation with Ecology*	Total Arsenic Dissolved Arsenic Total petroleum hydrocarbons, diesel and oil range TPH-D, TPH-O, Field parameters

\* If compliance monitoring from the Site shows that the arsenic remains at elevated concentrations for eight quarters of monitoring, with no other detections of petroleum hydrocarbon contamination, this data can be used to demonstrate that the elevated concentrations represents a locally high natural background for arsenic. Based on this evidence, a request can be made to remove the institutional controls for ground water at the site and discontinue monitoring.

*Naphthalene,  
Methylnaphthalene, &  
2-Methylnaphthalene*

LANDING – To include in A. *A list of on-site activities that have taken place during this quarter*

During a meeting with Jerome Cruz, Ching Pi and John Kane, Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene will continued to be included in compliance groundwater monitoring for one well, BL-MW-12 only. Concentrations of these chemicals were above their respective MTCA cleanup standard.

- F. A list of deliverables for the upcoming quarter if different from the schedule.  
 Same as the schedule

**EXHIBIT D**

**Bothell Landing Facility  
 Schedule of Deliverables**

<u>Deliverables.</u>	<u>Due Date</u>
Draft Institutional Control (IC) Plan; Draft Environmental Covenant(s); and a Title Report	Within 120 days after the effective date of the Agreed Order
Final IC Plan and Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft IC Plan and Draft Environmental Covenant(s).
Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after Ecology's approval of the Final IC Plan or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
Start ground water monitoring	Within 90 days after final CAP is approved
Combined TPH/Arsenic ground water monitoring	Quarterly for two years, then modify based on results and consultation with Ecology
Combined TPH/Arsenic ground water monitoring reports	90 days after 4 <sup>th</sup> quarter sampling
Progress reports	Every 3 months unless Ecology authorizes less frequent reporting

Site Name:	<b>BOTHELL PAINT &amp; DECORATING</b>
Agreed Oder No.:	15748 (Effective date May 31, 2018)

**A. A list of on-site activities that have taken place during this quarter**

The following on-site activity has occurred this quarter: Groundwater compliance monitoring for the spring quarter was performed in May/June 2019. Sampling results are attached.

**B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests**

There have been no deviations this quarter

**C. Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter**

There has been a deviation in the schedule this quarter with regard to

- i. Finalizing the Environmental Covenants (ECs) for the site – the City’s consultant attorney and the AAG are still working on finalizing the ECs. After the ECs are finalized, the next step will be to record the ECs after obtaining all the grantee signatures.

**D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule**

None

**E. All raw data (including laboratory analyses) received by Defendants during the past quarter and an identification of the source of the sample**

Groundwater compliance monitoring (2019) was conducted per the CMP Table 3-1B (as modified below). A tabulation of the sampling results is attached.

**Table 3-1B  
Sampling Approach – Ground Water  
SUBSEQUENT ROUNDS**

<b>Sample type</b>	<b>Sampling location</b>	<b>Sampling Frequency / Rationale</b>	<b>Analytes</b>
<b>Petroleum hydrocarbons – Ground Water</b>			
Point of Compliance	BPMW-6 BPMW-2R* BC-10	Quarterly for two years, then modify based on results and consultation with Ecology  Duration: 5 years  BC-10 will be monitored for two quarters to confirm compliance, if results exceed cleanup levels, monitoring will be the same as other wells.	Total petroleum hydrocarbons, diesel and oil range TPH-D, TPH-O, nitrate, manganese (soluble), sulfate, methane, alkalinity.  Field parameters: dissolved oxygen, redox potential, pH, conductivity, temperature, ferrous iron
<b>Petroleum hydrocarbons – Storm Water</b>			
1 sample upgradient of Site, 2 samples on Site	See Figure 2	One time event	Total petroleum hydrocarbons, gasoline, diesel and oil range, BTEX TPH-G/BTEX, TPH-D, TPH-O, HVOCs
<b>Arsenic – Ground Water</b>			
Point of compliance	BPMW-1 BPMW-6 BC-10 BC-11	Same as petroleum hydrocarbon, but with additional quarterly monitoring for two years if TPH decreases to be in compliance** BC-10 will be monitored for two quarters to confirm compliance, if results exceed cleanup levels, monitoring will be the same as other wells.	Total Arsenic Dissolved Arsenic Field parameters

\* BPMW-2R is a replacement well to be installed 30 to 35 feet northwest of BPMW-2, which was located in the middle of the newly constructed Horse Creek and therefore decommissioned.

- F. A list of deliverables for the upcoming quarter if different from the schedule.  
 Same as the schedule

**EXHIBIT D**

**Bothell Paint & Decorating Facility  
 Schedule of Deliverables**

<u>Deliverables.</u>	<u>Due Date</u>
Draft Institutional Control (IC) Plan; Draft Environmental Covenant(s); and a Title Report	Within 120 days after the effective date of the Agreed Order
Final IC Plan and Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft IC Plan and Draft Environmental Covenant(s).
Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after Ecology's approval of the Final IC Plan or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
Start ground water monitoring	Within 90 days after final CAP is approved
Combined TPH/MNA/Arsenic ground water monitoring	Quarterly for two years, then modify based on results and consultation with Ecology  Duration: 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Combined TPH/MNA/Arsenic ground water monitoring reports	90 days after 4 <sup>th</sup> quarter sampling  Annually for a minimum of 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Progress reports	Every 3 months unless Ecology authorizes less frequent reporting

Site Name:	<b>BOTHELL HERTZ</b>
Agreed Oder No.:	15747 (Effective date May 31, 2018)

**A. A list of on-site activities that have taken place during this quarter**

The following on-site activity has occurred this quarter: - Groundwater compliance monitoring for the spring quarter was performed in May/June 2019. Sampling results are attached.

**B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests**

There have been no deviations this quarter

**C. Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter**

There has been a deviation in the schedule this quarter with regard to

- ii. Finalizing the Environmental Covenants (ECs) for the site – the City’s consultant attorney and the AAG are still working on finalizing the ECs. After the ECs are finalized, the next step will be to record the ECs after obtaining all the grantee signatures.

**D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule**

None

**E. All raw data (including laboratory analyses) received by Defendants during the past quarter and an identification of the source of the sample**

Groundwater compliance monitoring (2019) was conducted per the CMP Table 3-1B (as modified below). A tabulation of the sampling results is attached.



**Table 3-1B  
Sampling Approach – Ground Water  
SUBSEQUENT ROUNDS**

Sample type	Sampling location	Sampling Frequency / Rationale	Analytes
<b>Petroleum hydrocarbons – Ground Water</b>			
Point of Compliance	HZMW-19 BLMW-8 BC-16	Quarterly for two years, then modify based on results and consultation with Ecology  Duration: 5 years	Total petroleum hydrocarbons, diesel and oil range TPH-D, TPH-O, nitrate, manganese (soluble), sulfate, methane, alkalinity.  Field parameters: dissolved oxygen, redox potential, pH, conductivity, temperature, ferrous iron
<b>Arsenic – Ground Water</b>			
Point of compliance	HZMW-1 HZMW-4 HZMW-12 HZMW-17 BC-16	Same as petroleum hydrocarbon, but with additional quarterly monitoring for two years if TPH decreases to be in compliance** BC-10 will be monitored for two quarters to confirm compliance, if results exceed cleanup levels, monitoring will be the same as other wells.	Total Arsenic Dissolved Arsenic Field parameters

F. A list of deliverables for the upcoming quarter if different from the schedule.

Same as the schedule

**EXHIBIT D**

**Bothell Former Hertz Facility  
Schedule of Deliverables**

<u>Deliverables.</u>	<u>Due Date</u>
Draft Institutional Control (IC) Plan; Draft Environmental Covenant(s); and a Title Report	Within 120 days after the effective date of the Agreed Order
Final IC Plan and Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft IC Plan and Draft Environmental Covenant(s).
Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after Ecology's approval of the Final IC Plan or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
Start ground water monitoring	Within 90 days after final CAP is approved
Combined TPH/MNA/Arsenic ground water monitoring	Quarterly for two years, then modify based on results and consultation with Ecology  Duration: 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Combined TPH/MNA/Arsenic ground water monitoring reports	90 days after 4 <sup>th</sup> quarter sampling  Annually for a minimum of 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Progress reports	Every 3 months unless Ecology authorizes less frequent reporting

**Table 2**  
**Compliance Groundwater Sampling**  
**Bothell Landing Site**  
**Bothell, Washington**

Sample ID	Sample Date	Approximate Depth to Groundwater	Diesel Range Organics	Heavy Oil Range Organics	Total		Total		Total		Total		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Other Semi-Volatile Organic Compounds (SVOCs)	Other Volatile Organic Compounds (VOCs)	Ferrous Iron	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity		
					Arsenic	Dissolved	Cadmium	Dissolved	Chromium	Dissolved	Lead	Dissolved											Mercury	Dissolved
		Feet Below Ground Surface	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L		mg/L	mV	uS/cm		
MW-1:W	9/6/2018	6.96	<50.0	<b>101</b>	<1.75	<1.75	<0.200	<0.200	<1.00	<b>3.51</b>	<b>0.911</b>	<0.500	<0.100	<0.100	<1.00	<0.503	<0.503	nd	nd	2.5	6.48	0.26	64.8	570
	3/11/2019	5.85	<52.8	<106	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.37	0.32	33.3	428.1
	5/24/2019	6.38	<260	<420	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.05	0.39	-77.3	488.9
	7/17/2019	7.05	<260	<b>470</b>	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	6.26	0.19	5.9	586
BL-MW-11:W	9/6/2018	9.84	<b>91.8 b</b>	<b>167</b>	<b>78.5</b>	<b>11.3</b>	<0.200	<0.200	<b>1.61</b>	<b>6.88</b>	<b>0.882</b>	<0.500	<0.100	<0.100	<1.00	<0.501	<0.501	nd	nd	2.0	6.48	0.12	-4.7	920
	3/6/2019	5.02	<50.5	<b>159</b>	<b>6.97</b>	<b>3.58</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	6.56	0.27	-49.1	388.8
	5/22/2019	8.31	<260	<b>510</b>	<b>7.9</b>	<b>7.6</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	6.17	0.25	-82.2	404.7
	7/19/2019	9.44	<260	<420	<b>27</b>	<b>21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.33	0.06	-28.9	589.6
BL-MW-12:W	9/6/2018	9.51	<b>362 b</b>	<b>144</b>	<b>87.6</b>	<b>14.4</b>	<0.200	<0.200	<b>3.75</b>	<b>6.92</b>	<b>0.712</b>	<0.500	<0.100	<0.100	<b>370*</b>	<b>13.3</b>	<b>12.3</b>	<b>SR</b>	<b>SR</b>	2.5	6.62	0.1	34.8	840
	3/11/2019	7.75	<53.1	<b>114</b>	<b>17.7</b>	<b>3.6</b>	-	-	-	-	-	-	-	-	<0.100	<0.100	<0.100	-	-	2.5	6.02	0.27	52.2	207.5
	5/22/2019	8.25	<260	<420	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	5.39	0.49	85.8	70.2
	7/22/2019	9.52	<260	<b>790</b>	<b>16.0</b>	<b>14.0</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	5.91	0.04	84.8	500.3
MTCA Method A or Method B Cleanup Level <sup>^</sup>			500	500	5.0	5.0	50	15	2.0	160	(1.51)	32	Varies#	Varies#	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

**Notes:**

All results reported in ug/L (micrograms per liter), or mg/L (milligrams per liter)

ug/L = micrograms per liter [equivalent to parts per billion (ppb)]

mg/L = milligrams per liter [equivalent to parts per million (ppm)]

**Bold** concentrations are detectable concentrations, below their Cleanup Level (if available).

**Shaded and Bold** concentrations are detectable concentrations, exceeding their Cleanup Level

nd = No analytes detected above the laboratory reporting limit. See laboratory analytical report for full list of results

# = Various cleanup levels for multiple analytes. See laboratory analytical report for full list of analytes

b = Identified as Diesel Range Organics, indicating the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).

**SR** = Minor detections of other VOCs or SVOCs, at concentrations below state cleanup levels. See analytical report for specific detections.

- = Not analyzed

<sup>^</sup> = MTCA Method B Cleanup Level in parentheses

\* - Result from analysis by EPA Method 8260. Concentration of 160 ug/L reported from analysis by EPA Method 8270

**Table 3**  
**Compliance Groundwater Sampling**  
**Bothell Paint Site**  
**Bothell, Washington**

Sample ID	Sample Date	Approximate Depth to Groundwater	Diesel Range Organics	Heavy Oil Range Organics	Total		Dissolved		Total		Dissolved		Total		Dissolved		Semi-Volatile Organic Compounds (SVOCs)	Volatile Organic Compounds (VOCs)	Methane	Nitrate (as Nitrogen)	Sulfate	Ferrous Iron	Total Alkalinity (as CaCO3)	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity
					Arsenic ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	Mercury ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L											
BPMW-2R:W	11/20/2018	8.08*	51.4 <sup>b</sup>	<101	<1.75	<1.75	<0.200	<0.200	1.72	<1.00	<0.500	<0.500	<0.100	<0.100	161	SR	nd	0.106	<0.1	5.98	1.0	124	7.27	0.14	3.2	229.5	
	3/7/2019	5.5*	122 <sup>b</sup>	219	-	-	-	-	-	-	-	-	-	-	94	-	-	0.651	<0.100	1.87	0.5	117	7.47	0.19	-64.7	240	
	5/20/2019	7.98*	<260	<420	-	-	-	-	-	-	-	-	-	-	60	-	-	0.66	0.055	<5.0	0.5	110	7.25	0.26	-120.9	235	
	7/18/2019	8.46*	<260	<420	-	-	-	-	-	-	-	-	-	-	92	-	-	1.2	<0.050	<5.0	0.5	110	7.14	0.07	38.9	258.7	
BPMW-6:W	11/20/2018	2.87	<50.2	194	16.5	15.0	0.207	<0.200	4.51	2.94	4.46	1.09	<0.100	<0.100	67.7	nd	nd	0.511	4.26	19.9	0.0	68.0	5.96	0.11	105.4	292.8	
	3/7/2019	2.25	<50.3	<101	14.7	13.8	-	-	-	-	-	-	-	-	27.7	-	-	2.25	10 <sup>e</sup>	5.18	0.5	25.7	5.68	0.32	98.9	159.2	
	5/20/2019	1.4	<270	500	9.3	8.4	-	-	-	-	-	-	-	-	26	-	-	1.8	25	<5.0	0.5	44.0	5.87	0.44	32.8	359.6	
	7/18/2019	3.14	<300	<490	44.0	38.0	-	-	-	-	-	-	-	-	130	-	-	5.9	<0.050	<5.0	1.5	120.0	6.06	0.07	109.9	382.4	
BC-10:W	11/27/2018	9.71	<49.9	<99.8	<1.75	<1.75	<0.200	<0.200	1.03	<1.00	<0.500	<0.500	<0.100	<0.100	184	nd	nd	0.958	<0.1	6.41	2.0	160	6.53	0.38	27.7	384.7	
	3/15/2019	9.42	<50.3	<101	<1.75	<1.75	-	-	-	-	-	-	-	-	194	-	-	0.0872	<0.10	6.22	3.0	167	6.62	0.23	-1	351	
	5/23/2019	10.9	<260	<410	<3.3	<3.0	-	-	-	-	-	-	-	-	150	-	-	0.23	<0.050	6	4.0	160	6.27	0.28	-149	348.8	
BC-11R	3/7/2019	10.06	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	-	6.44	0.26	-4.8	467.4	
	5/20/2019	11.06	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0	-	6.22	0.33	-45.7	461.9	
	7/18/2019	11.87	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	6.13	0.07	50	509.6	
BPMW-1	3/7/2019	12.56	-	-	12.9	4.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	6.52	0.24	0.4	515.6	
	5/23/2019	12.35	-	-	22.0	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	-	6.21	0.37	-162.7	514.9	
	7/19/2019	12.42	-	-	14.0	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	6.56	0.08	-23.3	535.6	
MTCA Method A or Method B Cleanup Level <sup>^</sup>			500	500	5.0	5.0	50	15	2.0	(2,240)	Varies#	Varies#	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Notes:  
All results reported in ug/L (micrograms per liter), or mg/L (milligrams per liter)  
ug/L = micrograms per liter [equivalent to parts per billion (ppb)]  
mg/L = milligrams per liter [equivalent to parts per million (ppm)]  
**Bold** concentrations are detectable concentrations, below their Cleanup Level (if available).  
**Shaded and Bold** concentrations are detectable concentrations, exceeding their Cleanup Level  
nd = No analytes detected above the laboratory reporting limit. See laboratory analytical report for full list of results  
# = Various cleanup levels for multiple analytes. See laboratory analytical report for full list of analytes  
\* = Well is angled at approximately 47 degree angle  
b = Identified as Diesel Range Organics, indicating the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).  
SR = Minor detections of other VOCs or SVOCs, at concentrations below state cleanup levels. See analytical report for specific detections.  
- = Not analyzed  
<sup>^</sup> = MTCA Method B Cleanup Level in parentheses

**Table 1**  
**Compliance Groundwater Sampling**  
**Bothell Hertz Site**  
**Bothell, Washington**

Sample ID	Sample Date	Approximate Depth to Groundwater Feet Below Ground Surface	Diesel Range Organics ug/L	Heavy Oil Range Organics ug/L	Total		Dissolved		Total		Dissolved		Total		Dissolved		Dissolved Manganese ug/L	Semi-Volatile Organic Compounds (SVOCs) ug/L	Volatile Organic Compounds (VOCs) ug/L	Methane mg/L	Nitrate (as Nitrogen) mg/L	Sulfate mg/L	Ferrous Iron mg/L	Total Alkalinity (as CaCO3) mg/L	pH	Dissolved Oxygen mg/L	Oxidation Reduction Potential mV	Conductivity uS/cm
					Arsenic	Cadmium	Chromium	Lead	Mercury																			
					ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L												
HZ-MW-1:W	9/4/2018	8.05	<49.8	<99.7	<1.75	<1.75	<0.200	<0.200	<b>13.6</b>	<b>12.8</b>	<0.500	<0.500	<0.100	<0.100	<2.00	nd	<b>PCE - 10.2</b>	<0.00863	1.69	7.42	0.0	52.1	6.52	8.48	63.7	140		
	9/5/2019	6.5	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.18	5.59	152.5	149.3		
	5/21/2019	6.81	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	5.99	7	66.7	159.6		
	7/16/2019	7.2	-	-	<3.0	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.23	7.98	158.3	203.4		
HZ-MW-4:W	9/4/2018	7.61	<50.0	<b>124</b>	<1.75	<1.75	<0.200	<0.200	<b>1.15</b>	<1.00	<0.500	<0.500	<0.100	<0.100	<b>165</b>	nd	<b>SR</b>	<0.00863	1.7	37.4	0.0	116	6.37	2.36	12.8	359		
	3/5/2019	5.8	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.27	0.24	133.6	486.1		
	5/21/2019	6.37	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	6.1	0.35	26.2	426.1		
	7/16/2019	7.2	-	-	<3.0	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.05	4.65	114.6	396		
HZ-MW-12:W	9/5/2018	10.85	<b>118<sup>b</sup></b>	<b>253</b>	<b>4.84</b>	<b>5.54</b>	<0.200	<0.200	<1.00	<1.00	<0.500	<0.500	<0.100	<0.100	<b>4,090</b>	nd	nd	3.17	<0.1	0.367	2.5	608	6.38	0.32	33.1	1,180		
	3/6/2019	8.33	-	-	<b>2.89</b>	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	6.37	0.59	-66.9	1,063		
	5/22/2019	9.46	-	-	<b>4.20</b>	<b>3.20</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0	-	6.01	0.26	-115.3	1,151		
	7/19/2019	10.35	-	-	<b>4.60</b>	<b>3.90</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	6.14	0.09	9.7	1,220		
HZ-MW-17:W	9/4/2018	7.9	<50.0	<99.9	<1.75	<1.75	<0.200	<0.200	<1.00	<1.00	<0.500	<0.500	<0.100	<0.100	<b>234</b>	nd	<b>SR</b>	0.00892	<0.1	17.7	3.0	111	6.85	7.94	15	269		
	3/5/2019	7.1	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	-	6.76	0.13	-24.9	269.6		
	5/23/2019	7.08	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	6.31	1.02	-79.6	304		
	7/17/2019	7.63	-	-	<3.0	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	-	6.65	0.07	-12.1	8.44		
HZ-MW-19:W	9/5/2018	7.69	<b>125<sup>b</sup></b>	<b>150</b>	<1.75	<1.75	<0.200	<0.200	<1.00	<1.00	<0.500	<0.500	<0.100	<0.100	<b>954</b>	nd	<b>SR</b>	0.0296	<0.1	65.6	3.5	198	6.34	0.48	26.1	513		
	3/5/2019	6	<b>210<sup>b</sup></b>	<98.5	-	-	-	-	-	-	-	-	-	-	<b>136</b>	-	-	0.0332	0.414 <sup>H</sup>	8.98	2.0	162	5.94	0.33	77.7	221.1		
	5/21/2019	6.25	<b>410</b>	<420	<3.3	<3.0	-	-	-	-	-	-	-	-	<b>720</b>	-	-	0.11	0.14	17	4.0	180	5.87	0.31	-11	330.9		
	7/16/2019	7.1	<260	<420	<3.0	<3.0	-	-	-	-	-	-	-	-	<b>850</b>	-	-	0.035	<0.050	44	2.0	210	6.09	0.12	45.9	520.9		
BC-16:W	9/5/2018	8.77	<b>91.4<sup>b</sup></b>	<b>104</b>	<b>3.34</b>	<1.75	<0.200	<0.200	<b>2.35</b>	<1.00	<b>2.91</b>	<0.500	<0.100	<0.100	<b>3,470</b>	nd	nd	2.18	<0.1	13	3.0	560	6.3	0.92	31.4	1040		
	3/6/2019	3.78	<50.4	<b>179</b>	<b>2.56</b>	<1.75	-	-	-	-	-	-	-	-	<b>3,760</b>	-	-	3.44	0.31	270	3.0	371	6.37	0.44	-31	1118		
	5/22/2019	5.89	<260	<b>450</b>	<3.3	<3.0	-	-	-	-	-	-	-	-	<b>4,600</b>	-	-	2.1	0.27	260	4.5	510	6.09	0.35	-114.1	1292		
	7/19/2019	7.63	<260	<b>540</b>	<3.3	<3.0	-	-	-	-	-	-	-	-	<b>4,800</b>	-	-	8.9	<0.050	160	2.0	560	6.15	0.84	39.7	1347		
BLMW-8R:W	11/21/2018	8.53	<b>879<sup>b</sup></b>	<b>1,680</b>	<b>6.63</b>	<b>2.12</b>	<b>0.276</b>	<0.200	<b>1.25</b>	<1.00	<0.500	<0.500	<0.100	<0.100	<b>1,070</b>	<b>SR</b>	nd	0.648	<0.1	2.37	2.5	244	6.56	0.19	43.5	570.7		
	3/6/2019	7.72	<49.5	<b>234</b>	-	-	-	-	-	-	-	-	-	-	<b>3,480</b>	-	-	4.26	<0.100	1.7	2.5	348	6.74	0.31	-64.4	669.8		
	5/21/2019	7.91	<b>400</b>	<b>720</b>	<b>7.10</b>	<b>5.60</b>	-	-	-	-	-	-	-	-	<b>2,400</b>	-	-	2.90	0.14	<5.0	3.0	310	6.46	0.27	-101.8	602.6		
	7/17/2019	8.34	<b>470</b>	<b>1,000</b>	<b>8.10</b>	<b>6.50</b>	-	-	-	-	-	-	-	-	<b>2,700</b>	-	-	3.30	<0.050	<5.0	2.0	340	6.36	0.06	-27.4	746		
MTCA Method A or Method B Cleanup Level <sup>A</sup>			500	500	5.0		5.0		50		15		2.0		(2,240)	Varies#	Varies#	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Notes:  
All results reported in ug/L (micrograms per liter), or mg/L (milligrams per liter)  
ug/L = micrograms per liter [equivalent to parts per billion (ppb)]  
mg/L = milligrams per liter [equivalent to parts per million (ppm)]  
**Bold** concentrations are detectable concentrations, below their Cleanup Level (if available).  
**Shaded and Bold** concentrations are detectable concentrations, exceeding their Cleanup Level  
nd = No analytes detected above the laboratory reporting limit. See laboratory analytical report for full list of results  
# = Various cleanup levels for multiple analytes. See laboratory analytical report for full list of analytes  
b = Identified as Diesel Range Organics, indicating the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).  
† = Holding times for preparation or analysis exceeded  
SR = Minor detections of other VOCs or SVOCs, at concentrations below state cleanup levels. See analytical report for specific detections.