



City of Bothell™

January 4, 2021

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

Re: Quarterly Progress Report for period ending December 2020

Site Name: **BOTHELL SERVICE CENTER/ SIMON & SON**
Site Address: 18107 Bothell Way NE, Bothell WA 98011
Parcel Numbers: 237420-0065
Facility/Site No.: 33215922
Consent Decree No.: 18-2-02852-3 SEA (Effective date February 2, 2018)

Reporting Period: October - December 2020

Summary:

City of Bothell (PLP) continues to make progress on work being performed for the Bothell Service Center site (BSCSS), in accordance with the Consent Decree (CD) with the Department of Ecology.

Per the requirements of Section XI of the Consent Decree "Progress Reports", the attached quarterly progress report has been prepared for the three-month period preceding this submittal to satisfy the terms described in the Consent Decree.

During this period the work has been geared towards continued operation of the bio-remediation system and quarterly groundwater sampling. There was also coordination work done between the prospective Lot D developer, the City and Ecology.

The attached progress report provides an update on work accomplished for the period ending December 30, 2020. Please contact me if you have any questions.

Sincerely,

Nduta Mbuthia

Nduta Mbuthia
Project Coordinator, City of Bothell



City of Bothell™

Reporting Period: Oct - Dec 2020
Date submitted (electronically): Jan 4, 2021
Date mailed (certified w/return receipt): *(deferred due to COVID-19 Stay at Home Order)*
Prepared by: Nduta Mbuthia, Project Coordinator
City of Bothell, Public Works Department
Phone: 425.806.6829
Email: nduta.mbuthia@bothellwa.gov

CONTENTS

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

- Continued operation of the bio-remediation system
- Groundwater sampling was completed in October 2020; analytical data is attached
- Received preliminary development plan from prospective Lot D developer Trammel Crow. Reviewed plan and coordinated with Ecology site manager; compared to existing remediation injection and extraction well, and groundwater monitoring well locations and developed tech memo. Attended meeting on Friday December 4, 2020 with Jerome Cruz Ecology Site Manager, and Trammel Crow to discuss existing locations of bioremediation injection and groundwater extraction wells, and groundwater performance monitoring wells compared to proposed development plan.

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

None

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

N/A

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

None. The GW compliance monitoring schedule below received Ecology site manager's concurrence:-

Q1 - Winter 2019: March 5, 2019 - March 15, 2019

Q2 - Spring 2019: May 20, 2019 - June 3, 2019

Q3 - Summer 2019: July 15, 2019 - August 5, 2019

Q4 - Fall 2019: October 7, 2019 - October 25, 2019

Q5 - Winter 2020: January 6, 2020 - January 20, 2020

Q6 - Spring 2020: Week of April 6, 2020 through week of April 20, 2020

Q7 - Summer 2020: Week of July 6, 2020 through week of July 20, 2020

Q8 - Fall 2020: Week of October 5, 2020 through week of October 19, 2020

Q9 - Winter 2021: PENDING

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

GW monitoring quarter sampling results attached

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

Attachments

- Updated Exhibit D from the CD (8-13-19)
- Groundwater sampling table and data - fall 2020
- Pertinent tech memos

Exhibit D
Site Schedule of Work and Deliverables

Deliverables		Due (Calendar Days) ¹
A. Administrative		
A.1	Consent Decree entered by the King County Superior Court (Effective Date of the CD)	Within 5 days of the execution by the Parties
A.2	Notification of selected contractor name and qualifications	Within 5 days of the effective date of Consent Decree (A.1)
A.3	Progress Reports	Quarterly on the 10 th of the month beginning after the effective date of the Consent Decree (A.1)
A.4	Financial Assurances – submit cost estimate for Ecology review and approval	Within 60 days of the effective date of Consent Decree
A.5	Financial Assurances - provide proof of financial assurances	Within 60 days after Ecology approves cost estimate (A.4)
B. Design		
B.1	Draft Pre-Remedial Design (PRDI) Project Plans ²	Within 5 days of the effective date of Consent Decree (A.1)
B.2	Draft PRDI Data Report and Draft Engineering Design Report (EDR) ³	Within 5 days of Ecology approval of Final PRDI Project Plans (B.1)
B.3	Final PRDI Data Report and EDR Report	Within 5 days of receipt of Ecology's comments on the Draft PRDI Data and EDR Reports (B.2)
B.4	90 % Plans and Specs [per WAC 173-340-400(4)(b)]	Within 5 days of receipt of Ecology comments on Final EDR Report (B.3)
B.5	100 % Plans and Specs	Within 5 days of receipt of Ecology comments on 90 % plans and specifications (B.4)
C. Field Construction		
C.1	Complete Construction Procurement	Within 5 days of completion of the 100% plans and specifications (B.1)
C.2	ERH System installation	Within 2 months of the effective date of Consent Decree
	ERH Operation	Within 6 to 8 months of the effective date of Consent Decree
C.3	Start install and begin operation of bioremediation-groundwater recirculation/SVE systems	Within 2 months of the effective date of Consent Decree
C.4	Install compliance monitoring well network	Within 2 months of the effective date of Consent Decree
C.5	Complete Construction	Within 2 months of the effective date of Consent Decree
C.6	ERH soil performance sampling	Within 6 to 8 months of the effective date of Consent Decree
C.7	Contingent soil excavation in ERH treatment area	Within 6 to 9 months of the ERH system shutdown

C.8	Decommission ERH; install and operate SVE system	Within 4 to 6 weeks of ERH system final shutdown. SVE system operation beginning March 2019.
C.9	Cleanup Action Report and As-Built Drawings and Report; Draft Environmental Covenant(s); and an updated Title Report	Within 60 days of decommission of SVE systems
D. Post Construction Work		
D.1	Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft Environmental Covenant(s).
D.2	Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after completion of the Final Environmental Covenant or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
D.3	Performance Groundwater Monitoring Quarterly Performance Monitoring Biannual Performance Monitoring	Quarterly performance monitoring for one year starting Summer 2019; Biannual performance monitoring until PCE, and its breakdown products reach their applicable cleanup levels in the selected performance monitoring wells provided in CAP
D.4	Decommission Bioremediation/Groundwater Recirculation system	Upon attainment of cleanup levels in performance monitoring wells
D.5	Indoor Air Sampling (two rounds)	1st round - post-construction and pre-occupation of buildings 2nd round - upon completion of Groundwater Closure report per Section 7.0 of the BSCSS Final CAP
D.6	Groundwater Confirmation Monitoring Quarterly Compliance Monitoring	Quarterly for two years following completion of performance monitoring. As described in CAP, contingency of an additional year of quarterly sampling if cleanup levels not attained. After one additional year, if COC groundwater cleanup levels have not been reached, include a 5-year compliance sampling event for the duration of the environmental covenant.
D.7	As Built Drawings and Report of vapor intrusion mitigation measures (vapor barrier and passive venting systems), and other engineering and institutional controls (if any).	Within 30 days of the City's receipt from the developer
D.8	Five Year Compliance Monitoring and Periodic Review reports	To follow Groundwater compliance monitoring (D.6). Groundwater monitoring required once every five years for the duration of the institutional controls on groundwater (if present) under the environmental covenant.

- 1) Schedule is in calendar days. Deliverable due date may be modified with Ecology concurrence without amendment to the Consent Decree.
- 2) Project Plans include the following: Work Plan, Sampling and Analysis Plan, Quality Assurance Project Plan, and Health and Safety Plan, to be submitted for Ecology review and approval. All plans will include a schedule for implementation as applicable.
- 3) The Engineering Design Report includes: a Construction Quality Assurance Project Plan, a Compliance Monitoring and Contingency Response Plan, Proposed Best Management Practices, Water Quality Monitoring Plan, and Substantive Requirements of Procedurally Exempt Permits. Ecology will not approve the Final EDR until the required permits have been obtained.



MEMORANDUM

To: Dr. Jerome Cruz
Site Manager, Washington State Department of Ecology

From: John Kane

Date: October 15, 2020

Re: Bothell Service Center Simon & Son Site (BSCSS)
Multiple Sampling Regimes MW-42

A handwritten signature in blue ink that reads "John Kane".

The purpose of this memorandum is to provide a groundwater sampling scope of work at well MW-42, based on a telephone discussion circa September 3, 2020 with Dr. Jerome Cruz, Site Manager of the Washington State Department of Ecology, for the Bothell Service Center Simon & Son Site (BSCSS) regarding confirmation of deep aquifer groundwater remediation in the vicinity of former groundwater well MW-9. Dr. Cruz has requested this additional sampling protocol instead of installing a new deep groundwater monitoring well. This sampling approach will be completed during or near the Fall 2020 BSCSS quarterly groundwater sampling round which is currently on-going.

Previous groundwater well MW-9 was located in the former source area of the dry cleaning operation on the BSCSS site, where halogenated volatile organic compounds (HVOCs) soil and groundwater contamination was characterized during in the BSCSS Remedial Investigation. Dense non-aqueous phase liquid (DNAPL) was found at depths of 45 to 50 feet below ground surface (bgs) in vicinity of MW-9. It should be noted that electrical resistance heating (ERH) deep wells were installed and operated in this former source area to depths of 55 feet bgs.

Based on the discussion with Dr. Cruz, Kane Environmental proposes to sample downgradient groundwater from existing deep well MW-42 by employing longer groundwater sampling purge times at higher pumping rates. Groundwater well MW-42 is currently located downgradient and approximately 10 to 15 lineal feet from previous well MW-9. The concept is that a larger radius

of influence at the well screen depth would capture deep groundwater from the previous MW-9 screened interval and provide a representative sample of water quality associated with the deep source area determined in the BSCSS Remedial Investigation.

The proposed scope of work is as follows:

- In MW-42, three consecutive pumping regimes for sampling would be employed. The first would be using standard routine EPA low flow sampling methods typically used for groundwater sampling events at the Site. (This sample will be used for the Fall 2020 quarterly sampling round). An initial water level reading will be measured. The one-quarter (1/4) inch polyethylene tubing will be placed in well MW-42 to an approximate depth of 3 to 4 feet from the bottom of the well and near the center of the well screen. The tubing will be connected to a low-flow peristaltic pump, which is then connected to a YSI flow-through-cell with monitoring probes that measure pH, ORP, DO, specific conductance, and temperature. The peristaltic pump rate will be set at a rate not to exceed a 0.3 foot drawdown in water level in well MW-42 following EPA groundwater well protocol. The water level will be checked every 5 minutes during well purging. The groundwater sample will be collected when field parameters are within recommended EPA limits, and any discrepancies will be noted.
- The second pumping regime would be at a higher pumping rate, but within the higher end of recommended flow rates of 0.3 feet drawdown in the EPA low flow purging and sampling procedure. A longer purging time, using the peristaltic pump, will be employed, such that the estimated volume of purged groundwater would be theoretically capturing groundwater around the screen depth at former well MW-9. The end result will be considered acceptable data, but noted as being collected at the higher end of the operating parameters for low flow rate.
- For the first and second pumping regimes, performance criteria for determination of stabilization would still be achieved and will be based on water-level drawdown, pumping rate and equipment specifications for measuring indicator parameters.
- The third pumping regime will be at a much higher pumping rate and using a submersible pump placed near the center of the MW-42 well screen, instead of a

low-flow peristaltic pump. The objective of the third pumping regime is to maximize the radius of influence of well MW-42 to obtain a groundwater sample further upgradient, again targeted at the location of previous well MW-9. It is possible that this sample result may not be considered acceptable based on standard industry practice for groundwater monitoring, but the goal is to confirm cleanup standards have been achieved in the deep groundwater area of previous well MW-9.

- Groundwater analytical results from previous quarterly sampling has revealed PCE concentrations remediated to below the state groundwater cleanup standard, therefore, this approach to sampling would help further confirm this result.
- The groundwater samples will be analyzed for HVOCs (PCE, TCE, cis-1,2 DCE, and VC and field parameters pH, ORP, DO, specific conductance, and temperature.).
- An InSitu Level TROLL 700 water level monitor (pressure transducer) will be placed in nearby well MW-43 and synoptic water level measurements collected to help estimate cone of depression and extent of hydraulic influence/capture. Transducer data will be collected for all three pumping events.
- A letter report with analytical results, description of tasks carried out, and variances from the original planned work will be completed three weeks from receipt of final analytical data results for Ecology review.



MEMORANDUM

To: Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov

From: John R. Kane and Jeffrey Jensen

Date: November 30, 2020

Re: Potential Future Redevelopment of Bothell Service Center Simon & Son Site
Bothell Service Center Simon & Son
18107 Bothell Way NE
Bothell, WA
WA Ecology Facility/Site ID: 33215922

This memorandum provides a description of the proposed redevelopment of the Bothell Service Center Simon & Son (BSCSS) Site (the Site) and the associated impacts to the current groundwater monitoring well and remediation system layout.

Background

The City of Bothell (the City) has entered into discussions with a potential land development firm (Trammell Crow) over the sale of the property that includes the BSCSS Site. According to Trammell Crow, any purchase of the property would culminate in the construction of a multi-story mixed commercial and residential structure. Trammell Crow have provided Kane Environmental with the proposed layout of the redevelopment. Figure 1 depicts the proposed layout of the ground floor of the structure with the current locations of groundwater monitoring wells, bioremediation groundwater injection and extraction wells, and ERH electrodes re-purposed as bioremediation injection wells. It is worth noting that no sub-grade parking is currently planned for the redevelopment.

As depicted in Figure 1, several monitoring wells, and bioremediation injection and extraction wells are located within areas of the proposed building that are designated residential occupation. Due to the nature of the use, these wells will need to be decommissioned. Based on the proposed building plans, the following monitoring wells and bioremediation injection or extraction wells appear to be impacted by the proposed redevelopment of the Site:

Shallow Monitoring Wells: MW-21, MW-43, MW-45, S-MW-2R, S-MW-5, HZ-MW-17;

Intermediate Monitoring Wells: MW-20, MW-44, S-MW-3R, HZ-MW-33;

Deep Monitoring Wells: MW-42

Bioremediation Injection/Extraction Wells: 10E

ERH Bioremediation Injection Wells: D1, D3, D6, E5

The wells listed above will need to be decommissioned most likely in late Summer 2021, but the actual dates are not yet proposed. Depending on groundwater analytical results, monitoring wells, bioremediation injection/extraction wells, and ERH bioremediation injection wells may be replaced at the nearest feasible and accessible location.

Proposed Well Decommissioning

As discussed above, several monitoring wells, bioremediation injection/extraction wells, and ERH bioremediation injection wells will need to be decommissioned. Kane Environmental proposes that during this decommissioning activity, several other monitoring wells on the Site, which are not presently being sampled, or where analytical results permit, be decommissioned.

The following monitoring wells are not included in BSCSS quarterly groundwater performance monitoring and are proposed to be decommissioned:

Shallow Monitoring Wells: MW-3, MW-5, MW-7, MW-21, MW-41, HZ-MW-4, HZ-MW-16, HZ-MW-17, HZ-MW-19, HZ-MW-21, HZ-MW-22, HZ-MW-32, and S-MW-6;

Intermediate Monitoring Wells: MW-28, HZ-MW-28, and HZ-MW-33;

Deep Monitoring Wells: MW-22, MW-33, MW-34, HZ-MW-25, HZ-MW-27, and HZ-MW-30.

The following monitoring wells are included in BSCSS quarterly groundwater performance monitoring and according to Table 1, have reported at least four consecutive quarters with PCE and TCE concentrations below their respective MTCA Method A Cleanup Levels and are proposed to be decommissioned:

Shallow Monitoring Wells: MW-43, MW-45, HZ-MW-31, and HZ-MW-34;

Intermediate Monitoring Wells: MW-20, MW-44, HZ-MW-23, HZ-MW-24;

Deep Monitoring Wells: MW-42.

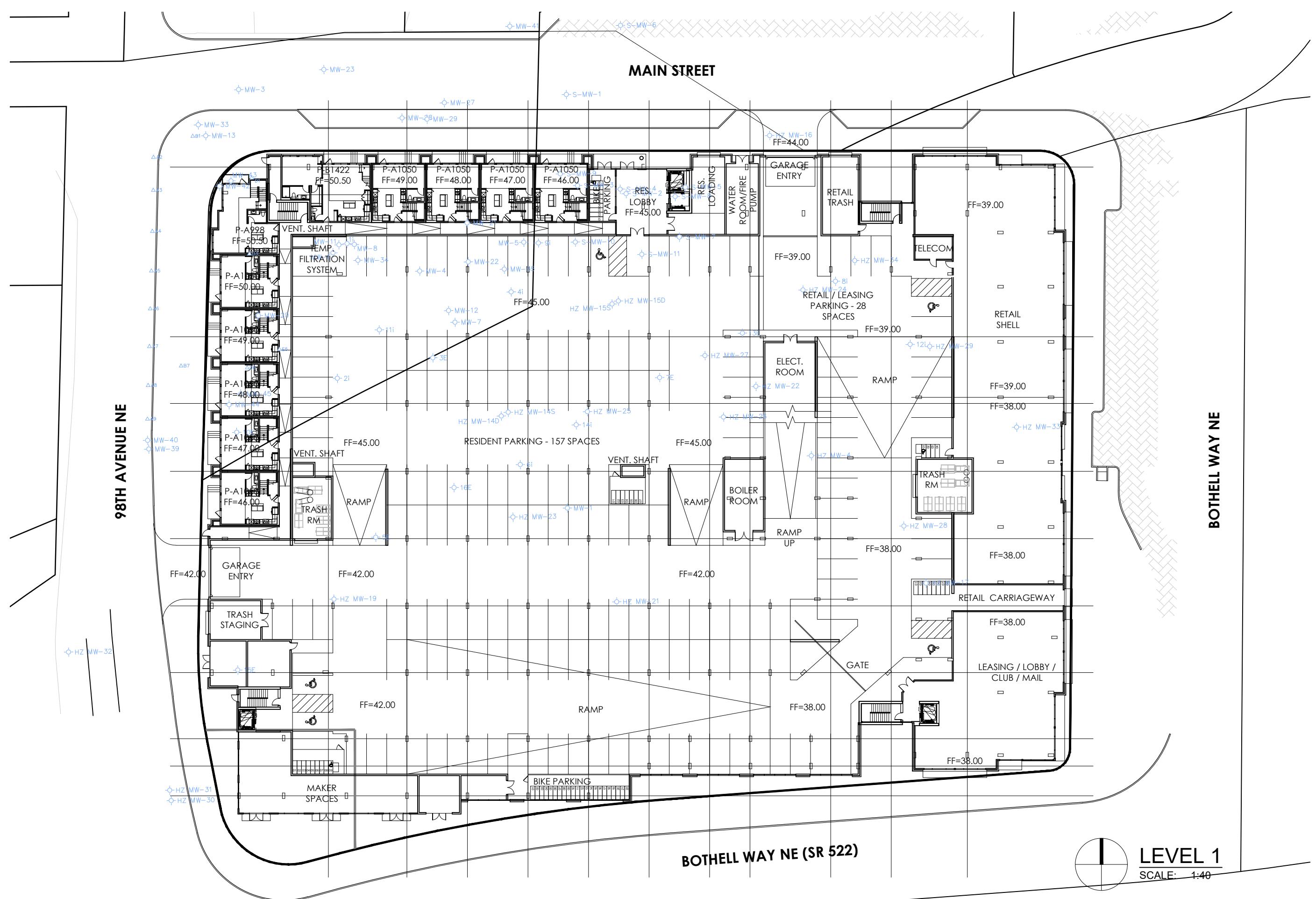
Potential Future Redevelopment of Bothell Service Center Simon & Son Site Bothell Service Center Simon & Son
18107 Bothell Way NE
Bothell, WA

ATTACHMENTS

Figure 1 Site Plan with Proposed Redevelopment

Table 1 Summary of PCE and Breakdown Products in Groundwater

FIGURES



TABLES

Table 1
Bothell Service Center Simon Son
Groundwater Analytical Results

Well	Well Type and Water Bearing Zone	Screened Depth, (ft bgs)	Top of Casing (TOC) Elevation (feet)*	Date Sampled	Depth to Water (ft below TOC)	GW Elevation (feet)	Sampled By	PCE ($\mu\text{g/L}$)	TCE ($\mu\text{g/L}$)	(cis) 1,2-DCE ($\mu\text{g/L}$)	Vinyl Chloride ($\mu\text{g/L}$)	pH	Temp (°C)	Conductivity (μS)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Dissolved Iron (ug/L)	Sulfate (mg/L)	Chloride (mg/L)	Ammonia as N (mg/L)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Total Organic Carbon (mg/L)
				12/5/18	7.93	40.03	Kane	<1.00	<0.50	<1.00	<0.20	5.90	15.3	62.5	38.7	6.94	<100	3.18	2.79	<0.100	<0.00863	<0.0162	<0.0151	2.7
				2/12/19	7.79	40.167	Kane	<1.0	<0.50	<1.0	<0.20	6.03	12	57.5	8.2	141.5	<100	4.16	3	<0.10	<0.00863	<0.0162	<0.0151	2.36
				6/4/19	7.96	39.997	Kane	0.72	<0.20	<0.20	<0.20	6.35	15.5	62.1	9.97	3.6	<56	<5.0	3.4	<0.05	<0.001	<0.0005	<0.0005	2.1

Table 1
Bothell Service Center Simon Son
Groundwater Analytical Results

Well	Well Type and Water Bearing Zone	Screened Depth, (ft bgs)	Top of Casing (TOC) Elevation (feet)*	Date Sampled	Depth to Water (ft below TOC)	GW Elevation (feet)	Sampled By	PCE (µg/L)	TCE (µg/L)	(cis) 1,2-DCE (µg/L)	Vinyl Chloride (µg/L)	pH	Temp (°C)	Conductivity (µS)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Dissolved Iron (ug/L)	Sulfate (mg/L)	Chloride (mg/L)	Ammonia as N (mg/L)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Total Organic Carbon (mg/L)
				10/21/19	8.92	38.29	Kane	3.5	3.8	220	1.5	6.33	27.8	522.0	0.08	-59.4	1,500	<5.0	15	<0.050	1	<0.0005	<0.0005	34
				1/22/20	8.09	39.12	Kane	2.5	2.7	230	70	6.66	20.4	388.6	1.1	-35.1	4,500	<5.0	12	1.3	2	<0.00022	<0.00029	11
				4/17/20	8.49	38.71	Kane	8.0	20	130	140	6.79	22.5	515.3	0.2	-15.1	580	62	8.9	0.25	0.062	<0.00022	0.0068	17
				7/20/20	8.74	38.47	Kane	<0.20	<0.20	1.1	18	6.34	23.1	729.0	0.17	-38.7	6,900	<5.0	12	0.28	15	<0.00022	0.05	92
				10/19/20	9.00	38.21	Kane	13	15	79	30	6.18	20.2	745.0	0.08	-91.3	8,600	7.6	14	5.1	9.7	<0.00022	0.019	60

Table 1
Bothell Service Center Simon Son
Groundwater Analytical Results

Well	Well Type and Water Bearing Zone	Screened Depth, (ft bgs)	Top of Casing (TOC) Elevation (feet)*	Date Sampled	Depth to Water ft below TOC	GW Elevation (feet)	Sampled By	PCE (µg/L)	TCE (µg/L)	(cis) 1,2-DCE (µg/L)	Vinyl Chloride (µg/L)	pH	Temp (°C)	Conductivity (µS)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Dissolved Iron (ug/L)	Sulfate (mg/L)	Chloride (mg/L)	Ammonia as N (mg/L)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Total Organic Carbon (mg/L)	
				7/16/19	10.61	37.63	Kane	<0.20	<0.20	<0.20	<0.020	6.88	16.2	274.4	0.11	-106.2	460	<5.0	5.2	0.3	0.35	<0.0005	<0.00050	2.1	
				10/18/19	10.48	37.76	Kane	<0.20	<0.20	<0.20	<0.020	6.99	14.5	207.7	0.11	7.4	610	<5.0	6.4	0.29	0.39	<0.0005	<0.0005	2.2	
				1/29/20	9.61	38.63	Kane	<0.20	<0.20	<0.20	<0.020	7.29	13.7	249.5	0.04	-82	570	<5.0	6.3	0.24	0.36	<0.00022	<0.00029	1.9	
				4/16/20	9.71	32.53	Kane	<0.20	<0.20	<0.20	<0.020	7.23	16.2	312.9	0.31	-11.6	1,100	<5.0	5.5	0.25	0.093	<0.00022	<0.00029	2.0	
				8/10/20	10.54	37.70	Kane	1.9	<0.20	<0.20	<0.020	6.28	17.5	236.5	0.14	176.4	390	5.1	5.5	0.29	0.17	<0.00022	<0.00029	2.0	
				10/19/20	10.4	37.84	Kane	<0.20	<0.20	<0.20	<0.020	6.84	15.6	263.5	0.17	-62.8	<56	5.2	6.1	0.28	0.2	<0.00044	<0.00058	2.0	
MW-30	Shallow Decommissioned	9 to 19	48.142	9/20/16	8.81	39.33	Kane	92,000	<500	<500	<500	6.65		241.0											
				10/26/16	7.33	40.81	Kane	130,000	<1,000	1,300	<1,000	6.40	15.7	619.0				120			0.15				26
MW-31	Deep Decommissioned	40 to 50	47.817	9/20/16	9.81	38.01	Kane	11	0.25	<0.20	<0.20	6.80		244.0											
				10/28/16	8.25	39.57	Kane	7.8	0.22	<0.20	<0.20	6.79		250.0											
MW-32	Deep Decommissioned	45 to 55	45.952	9/19/16	8.94	37.01	Kane	950	7.7	<4.0	<4.0	7.57		285.0											
				10/27/16	7.51	38.44	Kane	1,200	<10	<10	<10	7.65	14.8	276.0											

Table 1
Bothell Service Center Simon Son
Groundwater Analytical Results

Well	Well Type and Water Bearing Zone	Screened Depth, (ft bgs)	Top of Casing (TOC) Elevation (feet)*	Date Sampled	Depth to Water ft below TOC	GW Elevation (feet)	Sampled By	PCE ($\mu\text{g/L}$)	TCE ($\mu\text{g/L}$)	(cis) 1,2-DCE ($\mu\text{g/L}$)	Vinyl Chloride ($\mu\text{g/L}$)	pH (units)	Temp (°C)	Conductivity (μS)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Dissolved Iron (ug/L)	Sulfate (mg/L)	Chloride (mg/L)	Ammonia as N (mg/L)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Total Organic Carbon (mg/L)
				1/29/20	8.49	39.87	Kane	<0.20	<0.20	20	3.3	6.52	14.1	454.1	0.02	-24.8	19,000	<0.50	14	0.16	7.1	<0.00022	<0.00029	6.3
				4/16/20	8.88	39.47	Kane	<0.20	<0.20	26	27	6.46	14.7	567.6	0.47	-19.2	25,000	<5.0	14	0.21	8.9	<0.00022	0.012	3.5
				7/24/20	9.08	39.27	Kane	<0.20	<0.20	5.3	15	6.20	16.4	570.9	0.23	-34.7	36,000	<5.0	13	0.41	5	<0.00022	0.037	5.5
				10/26/20	9.26	39.09	Kane	<0.20	<0.20	9.9	4.5	6.18	15.6	549.0	0.25	-57.1	32,000	<5.0	14	0.39	7.3	<0.00022	0.0082	32
MW-43	Shallow	10 to 25	48.057	1/2/19	10.4	37.66	Kane	225	31.6	7.16	<0.20													
				3/18/19	8.42	39.64	Kane	1.66	<0.50	1.20	<0.20	6.61	33.3	183.6	0.10	-4.6	286	14.4	3.34	<0.10	0.0336	<0.0162	<0.0151	8.25
				6/5/19	8.68	39.38	Kane	9.10	7.60	35.0	<0.20	6.86	24.1	168.3	0.09	21.5	450	15	3.7	0.08	0.53	<0.038	<0.038	5.8
				7/30/19	9.17	38.89	Kane	<0.20	0.23	2.0	<0.020	6.32	26.0	711.0	0.09	-281	280	11	5.7	0.11	0.44	<0.0005	<0.0005	4.7
				10/22/19	9.67	38.39	Kane	0.80	<0.20	24.0	0.29	6.17	19.2	552.0	0.06	-40.2	18,000	9.3	10	0.43	0.32	<0.0005	<0.0005	110
				1/29/20	7.76	40.30	Kane	0.88	<0.20	8.7	1.9	6.58	12.2	836.0	0.18	141.7	1,800	130	8.2	0.66	0.42	<0.00022	0.0029	10
				4/21/20	7.62	40.44	Kane	0.47	<0.20	17	5.8	6.61	23	456.7	0.13	19.7	6,800	22	7.9	0.49	0.51	<0.00022	0.0055	15
				7/24/20	8.25	39.81	Kane	0.36	<0.20	11	3.5	6.84	17.3	695.0	0.15	-27.4	3,300	35	6.4	0.48	1.4	<0.00022	0.0035	9.7
				11/17/20	8.48	39.58	Kane	<0.20	<0.20	2.0	0.93	6.48	18	601.0	0.15	-1.4	2,800	60	5.5	0.50	1.6	<0.00022	0.0035	9.0

Table 1
Bothell Service Center Simon Son
Groundwater Analytical Results

Well	Well Type and Water Bearing Zone	Screened Depth, (ft bgs)	Top of Casing (TOC) Elevation (feet)*	Date Sampled	Depth to Water ft below TOC	GW Elevation (feet)	Sampled By	PCE (µg/L)	TCE (µg/L)	(cis) 1,2-DCE (µg/L)	Vinyl Chloride (µg/L)	pH	Temp (°C)	Conductivity (µS)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Dissolved Iron (ug/L)	Sulfate (mg/L)	Chloride (mg/L)	Ammonia as N (mg/L)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Total Organic Carbon (mg/L)	
				9/12/14			HWA	2.0	<0.20	<0.20	<0.20	6.94		345.0	0.89										
				12/16/14			HWA	0.5	<0.20	<0.20	<0.20	6.71		309.0	1.55										
				3/19/15			HWA	<0.20	<0.20	<0.20	<0.20	6.96		434.0	NA										
				9/26/16	8.90	29.67	Kane	<0.20	<0.20	<0.20	<0.20	6.73		230.0											
				10/27/16	6.61	31.96	Kane	<0.20	<0.20	<0.20	<0.20	6.89	14.9	238.0											
				7/24/18	7.45	31.12	Kane	<1.00	<0.50	<1.00	<0.20	7.17	16.1	250.0	0.41										
				9/12/18	7.90	30.67	Kane	<1.00	<0.50	<1.00	<0.20	6.97	16.2	267.0	0.09	39.9	2,540	16.9	7	<0.100	<0.00863	<0.0162	<0.0151	2.54	
				12/6/18	7.68	30.89	Kane	<1.00	<0.50	<1.00	<0.20	6.65	14.9	297.5	0.32	29.1	2,060	23.7	9.1	<0.100	<0.00863	<0.0162	<0.0151	2.28	
				5/31/19	7.08	31.49	Kane	<0.20	<0.20	<0.20	<0.20	6.91	15.2	312.3	0.11	-30.1	3,600	16	9	0.081	0.25	<0.015	<0.015	1.1	
				6/10/14			HWA	<0.20	<0.20	<0.20	<0.20	6.38		1901.0	0.14										
HZ-MW-18	Shallow <i>Decommissioned</i>	7.5 to 17.5																							

Table 1
Bothell Service Center Simon Son
Groundwater Analytical Results

Well	Well Type and Water Bearing Zone	Screened Depth, (ft bgs)	Top of Casing (TOC) Elevation (feet)*	Date Sampled	Depth to Water (ft below TOC)	GW Elevation (feet)	Sampled By	PCE ($\mu\text{g/L}$)	TCE ($\mu\text{g/L}$)	(cis) 1,2-DCE ($\mu\text{g/L}$)	Vinyl Chloride ($\mu\text{g/L}$)	pH	Temp (°C)	Conductivity (μS)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Dissolved Iron (ug/L)	Sulfate (mg/L)	Chloride (mg/L)	Ammonia as N (mg/L)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Total Organic Carbon (mg/L)
				12/4/18	7.23	33.46	Kane	6.21	<0.50	1.03	<0.20	6.38	14.2	334.2	0.10	75.6	<100	25.3	8.08	<0.100	<0.00863	<0.0162	<0.0151	2.3
				5/30/19	6.85	33.84	Kane	9.7	<0.20	1.4	<0.20	6.70	16.6	329.9	0.18	17	<56	28	9.3	<0.050	0.0042	<0.0005	<0.0005	<1.0
				7/30/19	7.34	33.35	Kane	5.0	<0.20	1.0	0.053	6.42	16.5	327.9	0.21	-96.7	<56	23	9.3	0.063	0.01	<0.0005	<0.0005	<1.0
				10/16/19	7.91	32.78	Kane	2.8	<0.20	0.53	0.055	6.61	15.1	322.7	0.03	152.3	<56	24	11	<0.050	0.022	<0.0005	<0.0005	<1.0
				1/24/20	6.86	33.83	Kane	1.5	<0.20	0.42	0.041	6.55	13.1	334.4	0.10	36.3	<56	23	14	<0.050	0.035	<0.00022	0.00052	<1.0
				4/13/20	6.33	34.36	Kane	73	2.5	4.9	<0.040	6.52	14.6	396.4	0.66	-4.8	<56	24	14	<0.050	0.059	<0.00022	<0.00029	<1.0
				7/17/20	6.82	33.87	Kane	15	0.84	2.2	0.026	6.29	15.7	370.0	0.31	-13.7	<56	24	13	<0.050	0.09	<0.00022	<0.00029	<1.0
				10/27/20	7.34	33.35	Kane	14	0.34	1.8	0.034	6.15	15.5	346.9	0.22	110.7	<56	27	13	<0.050	0.038	<0.00022	<0.00029	<1.0
				9/14/16	8.00	33.60	Kane	1.6	<0.20	0.34	<0.20	6.80		227.0										
				10/28/16	6.55	35.05	Kane	0.84	<0.20	<0.20	<0.20	6.51		208.0										
HZ-MW-27	Deep	45 to 55	41.597	7/13/18	7.35	34.25	Kane	2.24	<0.50	1.07	<0.20	6.77	15.1	215.0	0.40									
				9/18/18	7.73	33.87	Kane	1.75	<0.50	<1.00	<0.20	6.24	15.1	222.0	0.34	62.8	<100	15.3	8.08	<0.100	0.0449	<0.0162	<0.0151	4.12
				12/7/18	8.18	33.42	Kane	<1.00	<0.50	<1.00	<0.20	6.12	14.5	229.6	0.13	49.8	835	21.1	8.36	<0.100	0.0636	<0.0162	<0.0151	1.28
				5/30/19	7.30	34.30	Kane	<0.20	<0.20	<0.20	<0.20	6.51	15.8	223.5	0.22	18.6	1,200	18	8.7	<0.050	0.093	<0.005	<0.005	1.4

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