

JACOBS WELL SAMPLING FIELD LOG

Date: 4/15/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: MW-01

Field Team: L. TOCHKO + C. TORGERSON

Total Depth (ft) 24.57 (-) DTW (ft) 12.29 (X) Q₁ 17 gal/ft = Well Casing Volume (gal.) = 2.1

Field Conditions: 45°F, CLEAR, CALM

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

Purge Method: Transient peristaltic pump with | | new or dedicated polyethylene/teflon-lined tubing

Purge Method: Dedicated submersible pump with | | new or | | dedicated polyethylene tubing

Purge Method: Dedicated Hydrostar pump with | | new or | | dedicated polyethylene tubing

Pump Suction Depth (ft): 4 FT TUBING OUT OF WELL Purge water disposal: 15W DRUM

Comments/Exceptions to SAP:

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
07:26	PUMP	ON							12.29	
08:00	2.1	454.1	15.2	6.52	81.4	0.24	5.28	0.06	12.29	CLEAR COLORLESS ODORLESS
08:05	2.5	451.2	15.2	6.52	38.7	0.65	4.70	0.08	12.29	
08:10	2.7	450.9	15.3	6.53	20.9	0.28	5.80	0.04	12.29	
08:15	2.9	451.1	15.3	6.51	11.3	0.22	4.83	0.04	12.29	
08:20	3.25	450.7	15.4	6.53	1.2	0.20	3.14	0.07	12.30	
08:25	3.5	450.1	15.4	6.51	-4.0	0.20	4.78	0.05	12.30	
08:30	3.75	449.3	15.5	6.53	-8.6	0.14	4.20	0.05	12.30	
:										
:										
08:35	Start Sampling									
08:38	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

B2 = 0.0 PPM

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/15/21

Time: 08:35

Well ID: MW-01

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron	0.0mg/L Field measurement Only						HACH DR890- Ferrous Iron	
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2S04		SM5310
Carbon Dioxide	Field measurement Only 90mg/L						HACH CO2 Test Kit	
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID _____ Time: _____								
Comments: MW01 - 041521 - 0								

JACOBS WELL SAMPLING FIELD LOG

Date: 4/14/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: MW-02

Field Team: L. TOCHARO + C. TORGERSON

Total Depth (ft) 21.0 (-) DTW (ft) 9.38 (X) 0.17 gal/ft = Well Casing Volume (gal.) = 2

Field Conditions: 48°F, CLEAR, CALM

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

Purge Method: Transient peristaltic pump with | | new or dedicated polyethylene/teflon-lined tubing
 Purge Method: Dedicated submersible pump with | | new or | | dedicated polyethylene tubing
 Purge Method: Dedicated Hydrostar pump with | | new or | | dedicated polyethylene tubing

Pump Suction Depth (ft): 2.5 - 3 FT TUBING OUT Purge water disposal: DIW DRUM

Comments/Exceptions to SAP: ~~POIT~~ PROBE BROKEN

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	* pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
08:13	PUMP	ON							9.38	
08:50	2.0	282.5	16.2		46.0	0.89	1.89	0.05	9.52	CLEAR, COLORLESS ODORLESS
08:55	2.25	270.2	15.6		-87.1	0.27	0.83	0.05	9.50	
09:00	2.5	269.8	15.7		-103.5	0.24	0.71	0.05	9.50	
09:05	2.75	271.3	15.7		-107.7	0.26	0.60	0.05	9.52	
09:10	3.0	276.9	15.6		-110.4	0.35	1.36	0.05	9.54	
09:15	3.25	285.9	15.7		-113.8	0.81	0.37	0.05	9.50	
09:20	3.5	282.5	15.7		-115.0	0.99	0.45	0.05	9.52	
09:25	3.75	290.7	15.8		-116.2	0.95	0.53	0.05	9.52	
:										
09:30	Start Sampling									
09:33	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

B2 = 0.0 PPM

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/14/21

Time: 09:30

Well ID: MW-02

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron							6.0 mg/L	Field measurement Only HACH DR890- Ferrous Iron
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2SO4		SM5310
Carbon Dioxide							50 mg/L	Field measurement Only HACH CO2 Test Kit
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID	Time:							
Comments:	LAB pH							
	MW02 - 041421-0							

JACOBS WELL SAMPLING FIELD LOG

Date: 4/15/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: MW-03

Field Team: L. TOCHKO + C. TORGERSON

Total Depth (ft) 25.10 (-) DTW (ft) 10.98 (X0.17 gal/ft) = Well Casing Volume (gal.) = 2.4

Field Conditions: 54°F CLEAR, CALM

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

<input checked="" type="checkbox"/>	Purge Method:	Transient peristaltic pump with new or <input checked="" type="checkbox"/> dedicated polyethylene/teflon-lined tubing
<input type="checkbox"/>	Purge Method:	Dedicated submersible pump with new or dedicated polyethylene tubing
<input type="checkbox"/>	Purge Method:	Dedicated Hydrostar pump with new or dedicated polyethylene tubing
Pump Suction Depth (ft):		~ 4 FT TUBING-OUT OF WELL
		Purge water disposal: 10W DRUM

Comments/Exceptions to SAP:

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
08:56	Pump	ON							10.98	
09:28	2.5	342.1	15.4	6.89	-5.2	0.29	33.0	0.078	11.11	particulate in water, flakey, CI
09:33	2.7	342.2	15.3	6.64	-17.8	0.17	21.4	0.04	11.04	
09:36	3.0	346.0	15.3	6.62	-19.0	0.15	17.7	0.06	11.04	
09:43	3.2	338.9	15.4	6.65	-16.9	0.23	16.5	0.04	11.02	
:										
:										
:										
:										
:										
09:45	Start Sampling		09:45							
:	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

BZ < 0.0 ppm

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/15/21

Time: 09:45

Well ID: MW-03

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron				2.77 mg/L Field measurement Only				HACH DR890- Ferrous Iron
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2S04		SM5310
Carbon Dioxide				Field measurement Only 55 mg/L				HACH CO2 Test Kit
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID				Time:				
Comments:	MW03 - 041521 - 0							

JACOBS WELL SAMPLING FIELD LOG

Date: 4/14/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: MW-04

Field Team: L. TOANKO + C. TORGERSON

Total Depth (ft) 27.39 (-) DTW (ft) 11.75 (X0.17 gal/ft) = Well Casing Volume (gal.) = 2.6

Field Conditions: Sunny, ~70°F

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

<input checked="" type="checkbox"/>	Purge Method:	Transient peristaltic pump with new or <input checked="" type="checkbox"/> dedicated polyethylene/teflon-lined tubing
	Purge Method:	Dedicated submersible pump with new or dedicated polyethylene tubing
	Purge Method:	Dedicated Hydrostar pump with new or dedicated polyethylene tubing

Pump Suction Depth (ft): 4 FT TUBING OUT OF WELL Purge water disposal: IDW DRUM

Comments/Exceptions to SAP: pH PROBE NOT WORKING

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
10:00	PUMP	ON							11.75	
10:40	2.6	294.8	14.7	4.22	44.4	10.04	0.36	0.065	11.76	
10:45	2.9	298.1	14.5	-	33.8	2.16	1.85	0.06	11.76	
10:50	3.2	297.6	14.5	-	33.5	1.09	0.46	0.06	11.76	
10:55	3.4	299.1	14.5	-	32.5	0.66	0.36	0.04	11.76	
11:00	3.6	298.8	14.5	-	32.4	0.51	0.35	0.04	11.76	
11:05	3.8	300.4	14.6	-	31.5	0.41	0.57	0.04	11.76	
:										
:										
:										
:	Start Sampling	11:10								
:	End Sampling	11:15								

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

Breathing Zone: 0ppm

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/14/21

Time: 11 : 10

Well ID: MW-04

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron	0.39 mg/L Field measurement Only						HACH DR890- Ferrous Iron	
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2SO4		SM5310
Carbon Dioxide	Field measurement Only 50 mg/L						HACH CO2 Test Kit	
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID	Time:							
Comments:	LAB pH							
	MW04-041421-0							

JACOBS WELL SAMPLING FIELD LOG

Date: 4/15/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: MW-05

Field Team: L. TOCHKO + C. TORGERSON

Total Depth (ft) 27.84 (-) DTW (ft) 12.05 (X.17 gal/ft) = Well Casing Volume (gal.) = 2.7

Field Conditions: 66°F, CLEAR, CALM

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

Purge Method: Transient peristaltic pump with | | new or dedicated polyethylene/teflon-lined tubing

Purge Method: Dedicated submersible pump with | | new or | | dedicated polyethylene tubing

Purge Method: Dedicated Hydrostar pump with | | new or | | dedicated polyethylene tubing

Pump Suction Depth (ft): ~ 2 FT TUBING OUT OF WELL Purge water disposal: 1DW DRUM

Comments/Exceptions to SAP:

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
12:07	PUMP ON								12.05	
12:55	2.8	405.3	16.6	6.29	2.3	0.26	0.65	0.06	12.06	CLEAR, COLORLESS ODORLESS
13:00	3.15	403.9	16.4	6.17	0.4	0.15	0.37	0.07	12.06	
13:05	3.5	401.2	16.5	6.23	-0.5	0.27	0.35	0.07	12.06	
13:10	3.75	403.8	16.6	6.25	-1.1	0.19	0.44	0.05	12.05	
:										
:										
:										
:										
:										
13:15	Start Sampling									
13:20	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

BZ = 0.0 PPM

Laboratory Analytical Program - Semiannual Sampling

Groundwater Sampling

Project #: NWP21002.A.CS.EV.1

DATE: 4/15/21

Time: 13:15

Well ID: MW-05

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method	
	Equip-ment	Dupli-cate	Parent Sample						
Organic Constituents									
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace	
Metals									
Dissolved Ferrous Iron	0.33 mg/L Field measurement Only							HACH DR890- Ferrous Iron	
Natural Attenuation Monitoring Constituents									
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)	
TOC	1	1	1	250 mL	Glass	H2S04		SM5310	
Carbon Dioxide	Field measurement Only 85 mg/L							HACH CO2 Test Kit	
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace	
Duplicate ID Time:									
Comments: MW05-041521-0									

JACOBS WELL SAMPLING FIELD LOG

Date: 4/15/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: MW-06

Field Team: L. TOCHKO + C. TORGERSON

Total Depth (ft) 27.84 (-) DTW (ft) 11.50 (X 0.17 gal/ft) = Well Casing Volume (gal.) = 2.8

Field Conditions: 59°F, CLEAR, CALM

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

Purge Method: Transient peristaltic pump with | | new or | dedicated polyethylene/teflon-lined tubing
 Purge Method: Dedicated submersible pump with | | new or | | dedicated polyethylene tubing
 Purge Method: Dedicated Hydrostar pump with | | new or | | dedicated polyethylene tubing

Pump Suction Depth (ft): ~ 2 FT TUBING OUT OF THE WELL Purge water disposal: 10W DRUM

Comments/Exceptions to SAP:

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
10:18									11.50	
11:03	2.9	357.7	16.0	6.49	-25.0	0.21	12.0	0.064	11.50	Small flecks, slightly cloudy
11:08	3.2	385.2	16.0	6.23	-24.1	0.13	9.54	0.06	11.50	Almost clear
11:13	3.5	387.3	16.1	6.21	-23.7	0.26	7.21	0.06	11.50	
11:18	3.75	385.7	16.3	6.23	-20.7	0.18	7.67	0.05	11.50	
:										
:										
:										
:										
:										
:	Start Sampling	11:20								
:	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

BZ = 0.0 ppm

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/15/21 Time: 11 : 20 Well ID: MW06

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron	1.71 mg/L Field measurement Only							HACH DR890- Ferrous Iron
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2SO4		SM5310
Carbon Dioxide	Field measurement Only						110 mg/L	HACH CO2 Test Kit
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID MW100-041521-0 Time: 1200								
Comments: MW06-041521-0								

JACOBS WELL SAMPLING FIELD LOG

Date: 4/13/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: T451MW-035

Field Team: L. TOUHYO + C. TORGERSON

Total Depth (ft) 30 (-) DTW (ft) 18.48 (X) 0.17 gal/ft = Well Casing Volume (gal.) = 1.96

Field Conditions: 64°F, CLEAR, BREEZY

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

<input checked="" type="checkbox"/>	Purge Method:	Transient peristaltic pump with new or <input checked="" type="checkbox"/> dedicated polyethylene/teflon-lined tubing
	Purge Method:	Dedicated submersible pump with new or dedicated polyethylene tubing
	Purge Method:	Dedicated Hydrostar pump with new or dedicated polyethylene tubing

Pump Suction Depth (ft): ~25 FT, ~4 FT TUBING OUT OF WELL Purge water disposal: 10W DRUM

Comments/Exceptions to SAP: * pH PROBE NOT READING CORRECTLY

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	* pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
15:30	PUMP	ON							18.48	
16:10	2	148.2	15.1		69.4	7.16	0.80	0.06	18.56	CLEAR, COLORLESS
16:15	2.4	147.2	14.9		69.8	5.07	2.49	0.08	18.56	
16:20	2.6	148.6	15.0		70.0	5.04	0.31	0.04	18.56	
16:25	2.9	147.9	15.0		70.1	5.15	0.61	0.06	18.56	
:										
:										
:										
:										
:										
16:30	Start Sampling									
16:33	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

PID = 0.0 PPM IN BZ

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/13/21

Time: 16:30

Well ID: T451MW-035

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron	0.00 mg/L Field measurement Only							HACH DR890- Ferrous Iron
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2S04		SM5310
Carbon Dioxide	Field measurement Only 24 mg/L							HACH CO2 Test Kit
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID		Time:						
Comments: pH LAB T451MW035 - 041321-0								

JACOBS WELL SAMPLING FIELD LOG

Date: 4/13/21

Project #: NWP21002.A.CS.EV.1

Well I.D.: T451MW-09

Field Team: L TOUAKD + C TORGERSON

Total Depth (ft) 31.50 (-) DTW (ft) 18.68 (X0.17 gal/ft) = Well Casing Volume (gal.) = 2.2

Field Conditions: 64°F, CLEAR, WINDY

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

<input checked="" type="checkbox"/>	Purge Method:	Transient peristaltic pump with new or <input checked="" type="checkbox"/> dedicated polyethylene/teflon-lined tubing
	Purge Method:	Dedicated submersible pump with new or dedicated polyethylene tubing
	Purge Method:	Dedicated Hydrostar pump with new or dedicated polyethylene tubing

Pump Suction Depth (ft): ~ 22 FT, - 3 FT TUBING OUT OF WELL Purge water disposal: 10W DRUM

Comments/Exceptions to SAP: * pH PROBE BROKEN

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	* pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
14:08	PUMP ON								18.68	
14:45	2.2	187.4	16.6		54.3	3.27	2.41	0.06	18.70	CLEAR COLORLESS
14:50	2.45	186.7	16.5		53.3	3.24	0.51	0.05	18.70	
14:55	2.6	187.8	16.6		51.5	3.15	0.33	0.03 0.23 (1)	18.70	
15:00										
:										
:										
:										
:										
:										
15:00	Start Sampling									
15:03	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

PID: 0.0 ppm IN B2

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/13/21 Time: 15 : 00 Well ID: T451MW-09

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method	
	Equip-ment	Dupli-cate	Parent Sample						
Organic Constituents									
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl	4/13/21	EPA 8260C, no headspace	
Metals									
Dissolved Ferrous Iron	Field measurement Only						0.11 mg/L	HACH DR890- Ferrous Iron	
Natural Attenuation Monitoring Constituents									
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)	
TOC	1	1	1	250 mL	Glass	H2S04		SM5310	
Carbon Dioxide	Field measurement Only						36 mg/L	HACH CO2 Test Kit	
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace	
Duplicate ID Time:									
Comments: LAB pH									
T451MW09 - 041320-0									

JACOBS WELL SAMPLING FIELD LOG

Date: 14/14/21

Project #: **NWP21002.A.CS.EV.1**

Well I.D.: **T451MW-22**

Field Team: L. TOLTKO + C. TORGERSON

Total Depth (ft) 23 (-) DTW (ft) 14.65 (X 0.17 gal/ft) = Well Casing Volume (gal.) = 1.4

Field Conditions: slightly 61°F, HAZY, CALM

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

Purge Method: Transient peristaltic pump with | | new or dedicated polyethylene/teflon-lined tubing

Purge Method: Dedicated submersible pump with | | new or | | dedicated polyethylene tubing

Purge Method: Dedicated Hydrostar pump with | | new or | | dedicated polyethylene tubing

Pump Suction Depth (ft): ~ 1 FT TUBING OUT OF WELL Purge water disposal: DDW DRUM

Comments/Exceptions to SAP:

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
11:50	PUMP ON								14.65	
12:25	1.7	228.0	15.5	6.14	76.2	1.34	0.31	0.05	14.66	CLEAR COLORLESS ODORLESS
12:30	1.9	264.3	15.6	6.06	71.4	1.14	0.30	0.04	14.66	
12:35	2.1	264.3	15.5	6.03	66.6	1.46	0.22	0.04	14.66	
12:40	2.45	264.2	15.5	6.06	60.7	1.80	0.19	0.07	14.66	
12:45	2.7	263.5	15.5	6.08	57.0	1.20	0.22	0.05	14.66	
12:50	2.9	261.5	15.4	6.13	52.5	1.18	0.19	0.04	14.66	
12:55	3.1	261.0	15.7	6.14	49.5	1.13	0.21	0.04	14.66	
:										
:										
13:00	Start Sampling									
13:03	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

BZ = 0.0 PPM

Laboratory Analytical Program - Semiannual Sampling

Groundwater Sampling

Project #: NWP21002.A.CS.EV.1

DATE: 4/14/21

Time: 13:00

Well ID: ^W T4S1MW22

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	(3)	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron	0.02 mg/L Field measurement Only							HACH DR890- Ferrous Iron
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	(1)	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	(1)	250 mL	Glass	H2SO4		SM5310
Carbon Dioxide	Field measurement Only 80 mg/L							HACH CO2 Test Kit
Methane	3	3	(3)	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID	Time:							
Comments:	T4S1MW22 - 041421-0							

JACOBS WELL SAMPLING FIELD LOG

Date: 4/4/21

Project #: **NWP21002.A.CS.EV.1**

Well I.D.: 7451 MW-23

Field Team: L. TOUHEO + C TORGERSON

Total Depth (ft) 25 (-) DTW (ft) 13.31 (X 0.17 gal/ft) = Well Casing Volume (gal.) = 2

Field Conditions: CLEAR, SLIGHTLY HAZY, BREEZY, 64°F

Decontamination: Alconox wash, DI wash

PURGE INFORMATION

<input checked="" type="checkbox"/>	Purge Method:	Transient peristaltic pump with new or <input checked="" type="checkbox"/> dedicated polyethylene/teflon-lined tubing
	Purge Method:	Dedicated submersible pump with new or dedicated polyethylene tubing
	Purge Method:	Dedicated Hydrostar pump with new or dedicated polyethylene tubing

Pump Suction Depth (ft): ~ 3.5 FT TUBING OUT OF WELL Purge water disposal: 10W DEWM

Comments/Exceptions to SAP:

	Purge Volume (gallons)	Specific Conduct. (µS/cm)	Temp. (°C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Purge Rate (gpm)	DTW (ft)	* Clarity/ Color/Remarks
Target Stabilization Criteria	-	+/- 3%	-	+/- 0.1	+/- 10	+/- 0.3	+/- 10 if > 10 NTU	0.03 - 0.08	-	
Time										
13:20	PUMP	ON							13.31	
13:45 ⁵⁰ <u>13:45</u> <u>(2)</u>	2.2	232.4	15.7 <u>23.7</u> <u>(2)</u>	6.81	34.0	1.78	2.27	0.07	13.35	CLAR COULES OOZELESS
13:55	2.8	226.4	15.7	6.53	28.4	1.55	1.83	0.08	13.34	
14:00	3.1 ¹⁰	225.5	15.7	6.50	29.9	1.40	1.07	0.06	13.33	
14:05	3.3	225.4	15.8	6.51	29.9	1.39	0.84	0.04	13.33	
:										
:										
:										
:										
:										
14:10	Start Sampling									
14:13	End Sampling									

* VC = Very cloudy CI = Cloudy SC = Slightly Cloudy VSC = Very Slightly Cloudy AC = Almost Clear C = Clear CC = Crystal Clear

BZ = 0.0 PPM

Laboratory Analytical Program - Semiannual Sampling
Groundwater Sampling
Project #: NWP21002.A.CS.EV.1

DATE: 4/14/21

Time: 14:10

Well ID: T4SIMW-23

Sample I.D.	Number of Sample Containers (Circled)			Volume	Type	Pres.	Shipping Date	Analytical Method
	Equip-ment	Dupli-cate	Parent Sample					
Organic Constituents								
TCE, cis 1,2-DCE, PCE, VC	3	3	3	40 mL	Glass	HCl		EPA 8260C, no headspace
Metals								
Dissolved Ferrous Iron	0.0 mg/L Field measurement Only						HACH DR890- Ferrous Iron	
Natural Attenuation Monitoring Constituents								
Nitrate, Sulfate, Chloride	1	1	1	250 mL	Poly	None		Nitrate (300), Sulfate & Chloride (300.0_28D)
TOC	1	1	1	250 mL	Glass	H2S04		SM5310
Carbon Dioxide	Field measurement Only 40 mg/L						HACH CO2 Test Kit	
Methane	3	3	3	40 mL	Glass	HCl		RSK 175, no headspace
Duplicate ID _____ Time: _____								
Comments: T4SIMW23-041421-0								

TASK: COLLECT ~~GROUND~~ WATER LEVEL MEASUREMENTS AND
 BEGIN GROUNDWATER SAMPLING

PERSONNEL: L. TUCHKO + CALIB TORGERTSON / JACOBS

WEATHER: 41°F / 64°F CLEAR/AM CLEAR + BREEZY/PM

0730 ON SITE. HTS TAILGATE, TOPIC OTHER VEHICLES DRIVING
 AROUND THE SITE. LARGE PIPES.

0820 CHECK W C PORT OF PDX, HAVE GATE SLIP 408 OPENED
 BEGIN OPENING WELLS. OPEN ALL WELLS BEFORE
 TAKING WELL MEASUREMENTS.

1015 BEGIN TAKING WELL MEASUREMENTS

WELL ID	TIME	WATER LEVEL (FT BTOC)	NOTES
T451MW-10	10:16	7.61	1/2 BOLTS, PUNG LOOSE, RUSTY COVER
T451MW-09	10:18	18.68	1/2 BOLTS RUSTED OUT
T451MW-035	10:24	18.48	NO BOLTS, RUSTY LOCK + COVER, <small>WELL CAP CASSETT MISSED UP</small>
T451MW-25	10:40	14.00	NO BOLTS, RUSTY LOCK + COVER
T451MW-17	10:54	15.95	1/2 BOLTS, RUSTY LOCK + COVER
T451MW-23	11:05	13.30	0/2 BOLTS
T451MW-025	11:10	17.22	3/3 BOLTS, <small>CORR RUSTY</small> THREADING STRIPPED (X)
T451MW-22	11:15	14.85	2/2 BOLTS, THREADING STRIPPED
MW-03	11:28	10.91	3/3 BOLTS, <small>BOLTS DIDNT TIGHTEN</small> LOCK NOT ATTACHED TO WELL CAP
MW-04	11:34	12.6 11.76	3/3 BOLTS, ONE BOLT DOESNT TIGHTEN
MW-01	11:40	12.28	2/3 BOLTS
MW-06	11:44	11.47	2/3 BOLTS, NO LOCK ON CAP, <small>1 BOLT WOULDNT TIGHTEN</small> (X)
MW-02	11:48	9.36	3/3 BOLTS
MW-05	11:52	12.05	3/3 BOLTS

1230 CALIBRATE EQUIPMENT

YSI QUATRO C102938

STANDARD	PH=4.0	PH=7.0	PH=10.0	SP. COND	ORP (234mV)	774.3mMhly
READING	*	*	*	1415	234.0	DO 100%
TEMP	*				17°C	99.5% = 9.54mg/L

HACH 2100Q C103189

STANDARD (NTU)	5.6	53.6	527
READING (NTU)	5.60	53.5	530

MINI RAE 3000 C102557

STANDARD	FRESH AIR (0.0ppm)	100 PPM ISOBU
READING	0.0ppm	100 PPM

ISOBUTYLENE 100.0 PPM LN = 066003 EXPIRES OCT 2021

* PH PROBL NOT CALIBRATING, READING PH BUFFER
 VALUES ALL AS AROUND 7. CALLED KEVIN MAYER /DWH

COULD NOT SOLVE PROBLEM BY TROUBLESHOOTING. WILL SEND REPLACEMENT

JP 4/13/21

1345 CALL KRIS WARSON / PM TO VERIFY TO HAVE LAB TEST FOR
 PH AND CONTINUE SAMPLING. PH NOT FIELD RECORDED

1350 SET UP @ T4S1MW-09 DTW = 18.68 FT BTDC

1500 COLLECT SAMPLE T4S1MW09 - 041321-0
 Fe(II) = 0.11 mg/L CO₂ = 36 mg/L

1530 SET UP @ T4S1MW-03S DTW = 18.48 FT BTDC

1630 COLLECT SAMPLE T4S1MW03S - 041321-0
 Fe(II) = 0 mg/L CO₂ = 24 mg/L

1705 CHECK OUT WITH PORT SECURITY + OFFSITE

1735 DROP OFF COOLER @ FEDEX

Laura Puckett
 4/13/2021

TASK: CONTINUE GW SAMPLING

PERSONNEL: LAURA TOUTKO + CALEB TORGERSON

WEATHER: 72°F/43°F AM - CLEAR + CALM PM CLEAR, SLIGHT BREEZE

0730 ON SITE H+S TRAILGATE FIRE HAZARD + FIRE EXTINGUISHERS

0750 DROP OF ~10 GALS IDW INTO MWD1-MW04, PORT WELLS
IDW DRUM. ¹⁵ ~~20~~ GAL TOTAL.

0810 SET UP @ MW-02 DTW = 9.38 FT BTDC

CALIBRATE EQUIPMENT

YSI QUATRO	C102938	240mV	774.3mV	NO PH
STANDARD	SP COND 1413 µS/cm	ORP 13.1°C	DO 100% SAT	
READING	1413	239.7mV	97.3%	

HACH 2100Q C103189

STANDARD	5.6	53.6	527
READING	5.55	53.4	529

MINI RAE 3000 C102557

STANDARD	FRESH AIR O ₂ ppm	100 ppm	SAME LOT AS YESTERDAY
READING	0.0 ppm		

0930 COLLECT SAMPLE MW02-041421-0

Fe(II) = 6.0 mg/L 3.0 mg/L @ 1:1 DILUTION WITH DIW CO₂ = 50 mg/L

0955 SET UP @ MW-04 DTW = 11.75 FT BTDC

1110 COLLECT SAMPLE MW04-041421-0

Fe(II) = 0.39 mg/L CO₂ = 70 mg/L

1140 CHECK OUT @ NWP

1145 CHECK IN W/ ^{PORT} PDX SECURITY AND SET UP @ T4S1MW-22
DTW = 14.65 FT BTDC

CALIBRATE YSI QUATRO C103144

STANDARD	pH=4.0	pH=7.0	pH=10.0	SP COND 1413 µS/cm	ORP ^{PTC} 240mV	DO 100%	774.3mV
READING	3.99	7.01	10.03	1413	233.9mV	104.3%	8.93mV

1300 COLLECT SAMPLE T4S1MW22-041421-0

Fe(II) = 0.02 mg/L CO = 80 mg/L

1315 SET UP @ T4S1MW23 DTW = 13.31 FT BTDC

1410 COLLECT SAMPLE T4S1MW23-041421-0

Fe(II) = 0.0 mg/L CO = 40 mg/L

1450 CHECK OUT OF PORT SECURITY + OFFSITE

1515 DROP OFF COOLER @ FEDEX

Laura Toutko
4/14/21

TASK: CONTINUE GW SAMPLING

PERSONNEL: LAURA TOCHKO + CALEB TORGERSON

WEATHER: 75°F / 46°F, AM CLEAR PM CLEAR

0700 ON SITE, HTS TAIL GATE. LIFT PROPERLY, SUN EXPOSURE

0715 DROP OFF ~15 GALLONS IDW. WATER UP TO 1ST RING.

MW01 - MW04 + PORT WELL IDW DRUM ~25 GAL

0720 SET UP @ MW-01 DTW = 12.29 FT BTDC

CALIBRATE EQUIPMENT

YSI QUATRO C103144

STANDARD	pH=4.0	pH=7.0	pH=10.0	1413 $\mu\text{m}/\text{cm}$ SP COND	13.7% ORP 240.0mV	793.7mmHg DO 100%
READING	4.12	7.02	10.06	1413	240.1mV	103.1
HACH 2100Q C103189		STANDARD	5.6	53.6	527	
		READING	5.77	53.2	527	
MINIRAE 3000 C102557		STANDARD	FRESH AIR 0.09ppm / 100 PPM ISOBUTYLENE		SAME INFO AS 4/13/21	
		READING	0.0ppm	100.4		

0835 COLLECT SAMPLE MW01-041521-0

Fe(II) = 0.0 mg/L CO₂ = 90 mg/L

0855 SET UP @ MW-03 DTW = 10.98 FT BTDC

0945 COLLECT SAMPLE MW03-041521-0

Fe(II) = 2.77 mg/L CO₂ = 55 mg/L

1015 SET UP @ MW-06 DTW = 11.50 FT BTDC

1120 COLLECT SAMPLE MW06-041521-0

Fe(II) = 1.71 mg/L CO₂ = 110 mg/L 1:1 DILUTION IDW: SAMPLE 55 mg/L

COLLECT FIELD DUP @ MW100-041521-0 @ 12:00

1205 SET UP @ MW-05 DTW = 12.05 FT BTDC

1315 COLLECT SAMPLE MW05-041521-0

Fe(II) = 0.33 mg/L CO₂ = 85 mg/L

1342 DROP OFF IDW

~ 8 gal FROM MW-05 + MW-06. ~ 1/3 FULL ~ 16 GAL

~ 7 gal FROM MW-01 + MW-03 ~ 2/3 FULL ~ 34 GAL MW01-MW04

+ PORT PDX WELLS + ONE MW01-04, PORT PDX ON SITE FROM LAST EVENT

3 DRUMS TOTAL. HAD ISSUES GETTING DRUM RINGS BACK ON

1450 CHECK OUT @ NWP. OFF SITE

1515 DROP OFF COOLER @ FedEx

Laura Touhko
4/15/21

