



May 5, 2023

RE: 2023 Groundwater Sampling Results to Date at Kearl

In April, Imperial reported results above criteria for a total of 16 wells to the EDGE hotline. Out of the 16 wells, 15 were located off-lease and one was at the Kearl lease boundary. Seven of the off-lease wells were recently installed in the areas where seepage has been observed at surface. The other 8 of the off-lease wells are located north of the West External Tailing Area. Six out of the eight were drilled during the winter of 2023 as part of the expansion of the existing deep groundwater seepage interception system monitoring program. The wells were drilled to further delineate groundwater quality changes in the deep groundwater system. Attachment 1 provides figures with the groundwater wells locations.

The analytical results for the 16 wells reported through EDGE are provided in the data table, including applicable guidelines (Attachment 2). Guidelines are designed to protect humans and ecosystems in a wide range of settings and are a useful screening tool to identify potential risk associated with various constituents at a given concentration. Further interpretation of local conditions is often required given naturally occurring or background constituents and receptor-based characteristics.

Most of the off-lease groundwater wells were only sampled once and additional confirmatory samples are required for interpretation. For the wells installed where seepage has been observed at surface, the results were within ranges that we expect given that the location of the wells is within the source area. Exceedances include various PAHs, total sulphide, total dissolved solids and F2 hydrocarbons. In addition, there are detections of naphthenic acids which do not have guidelines. For the deep groundwater wells, exceedances were reported for sulphate and dissolved sodium. Other constituents also exceed guidelines but require further interpretation as some constituents such as ammonia or iron, have been known to naturally exceed the applicable guidelines at Kearl. In addition, organics such as F2 hydrocarbons, pyrene or naphthenic acids have been historically reported in groundwater at Kearl as naturally occurring. Additional sampling at these locations is required to characterize the water quality.

As part of our ongoing efforts to enhance our water monitoring program, Imperial is installing additional monitoring wells, between the lease boundary and the Firebag River.

Attachment 1: Monitoring Wells locations

Existing 2022 Surface Water Locations

- ⊕ Most recent 2022 sulphate concentration above surface water guideline (429 mg/L)
- ⊕ Most recent 2022 sulphate concentration within surface water guideline (429 mg/L)

Existing 2022 Groundwater Wells

- Most recent 2022 sulphate concentration above surface water guideline (429 mg/L)
- Most recent 2022 sulphate concentration within surface water guideline (429 mg/L)

New 2023 Surface Water Locations

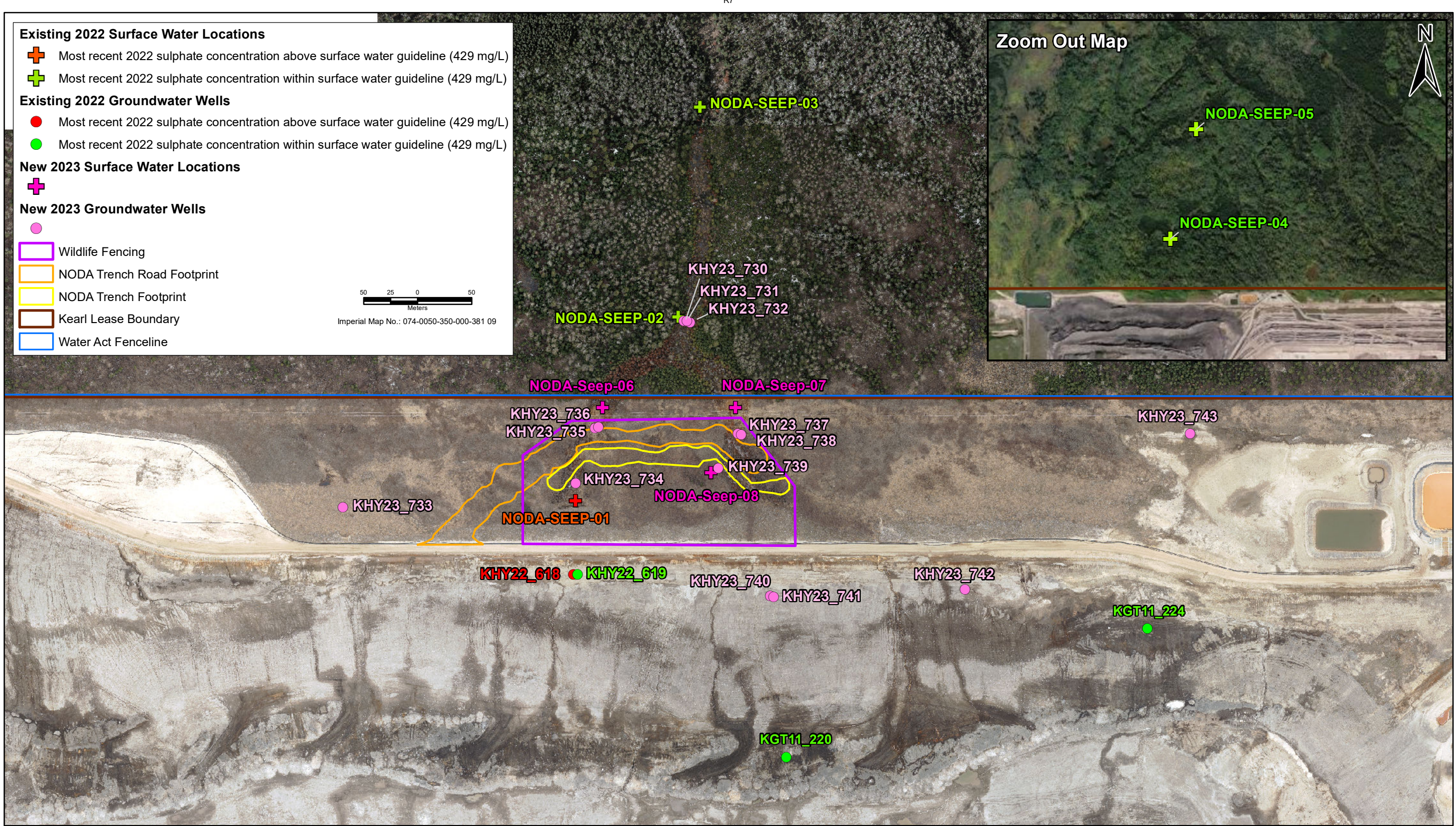
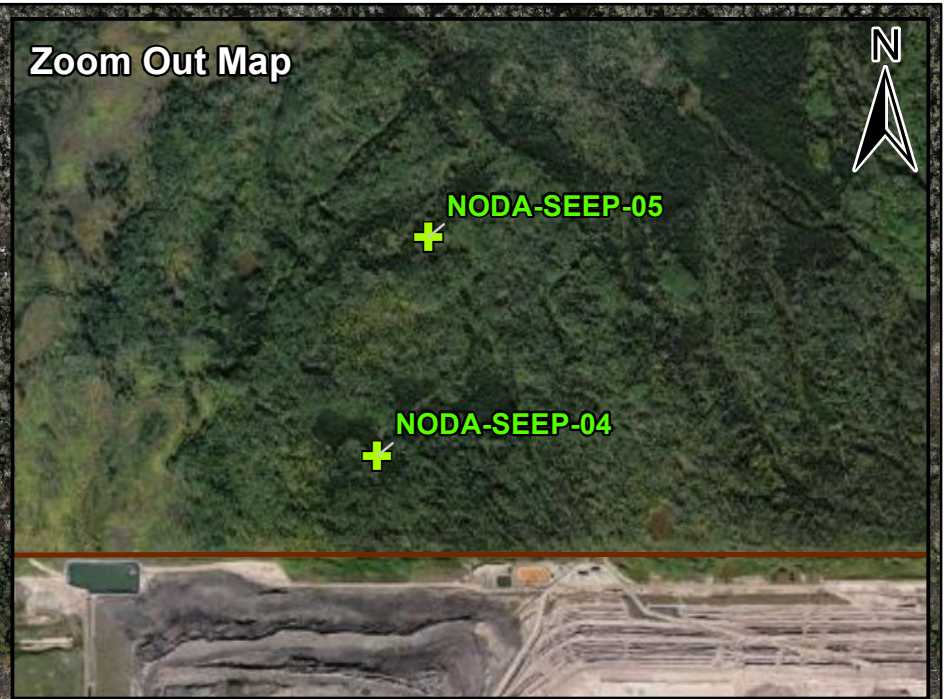
- ⊕

New 2023 Groundwater Wells

-

- Wildlife Fencing
- NODA Trench Road Footprint
- NODA Trench Footprint
- Kearl Lease Boundary
- Water Act Fenceline

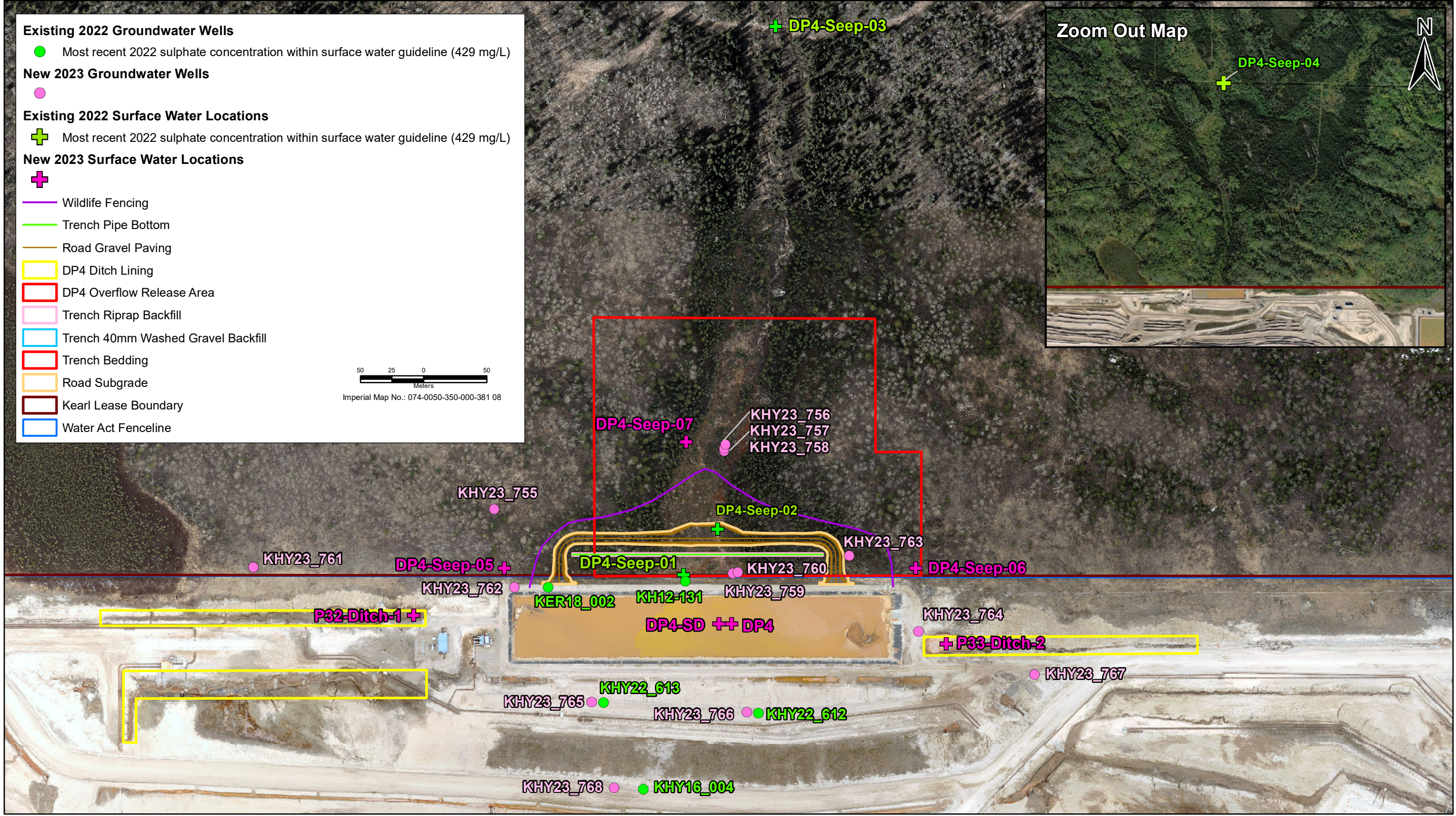
Imperial Map No.: 074-0050-350-000-381 09



NOTES:
 - Detailed design for source control and containment is in Appendix B
 - 50cm UAV imagery captured on May 5, 2022
 - Additional imagery from ESRI basemap



IMPERIAL									
KEARL – MINING NODA SOURCE CONTROL DESIGN AND PROPOSED 2023 MONITORING PROGRAM OVERVIEW MAP									
PROJECTION UTM 12N		DATUM NAD83		CONTRACTOR NAME --				CONTRACTOR MAP NUMBER Figure 4	
DRAWN SQ	CHECK AE	DESIGN SQ	APPR. AE	DATE 23 03 27	SCALE 1:3,500	IMPERIAL MAP NUMBER 074-0050-350-000-381 09		REV. 3	



Existing 2022 Groundwater Wells
 ● Most recent 2022 sulphate concentration within surface water guideline (429 mg/L)

New 2023 Groundwater Wells
 ●

Existing 2022 Surface Water Locations
 + Most recent 2022 sulphate concentration within surface water guideline (429 mg/L)

New 2023 Surface Water Locations
 +

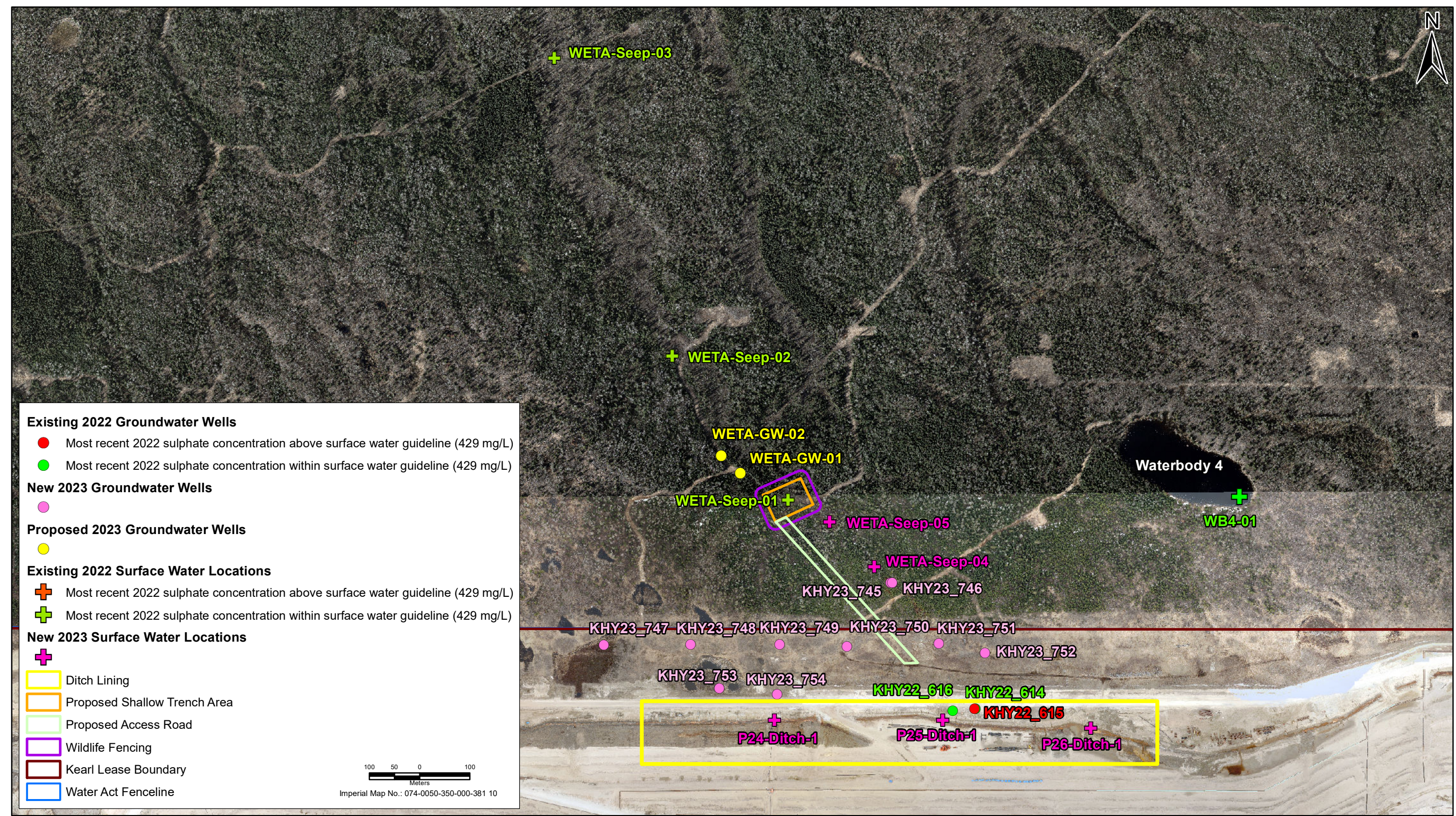
— Wildlife Fencing
 — Trench Pipe Bottom
 — Road Gravel Paving
 □ DP4 Ditch Lining
 □ DP4 Overflow Release Area
 □ Trench Riprap Backfill
 □ Trench 40mm Washed Gravel Backfill
 □ Trench Bedding
 □ Road Subgrade
 □ Kearl Lease Boundary
 □ Water Act Fenceline

50 25 0 50
 Meters
 Imperial Map No.: 074-0050-350-000-381 08



NOTES:
 - 50cm UAV imagery captured on May 5, 2022 and May 21, 2022.

		IMPERIAL			
		KEARL – MINING DP4 SOURCE CONTROL DESIGN AND PROPOSED 2023 MONITORING PROGRAM OVERVIEW MAP			
PROJECTION	DATUM	CONTRACTOR NAME		CONTRACTOR MAP NUMBER	
UTM 12N	NAD83	--		Figure 8	
DRAWN	CHECK	DESIGN	APPR.	DATE	SCALE
SQ	AE	SQ	AE	23 03 27	1:3,000
				IMPERIAL MAP NUMBER	REV.
				074-0050-350-000-381 08	3



Existing 2022 Groundwater Wells

- Most recent 2022 sulphate concentration above surface water guideline (429 mg/L)
- Most recent 2022 sulphate concentration within surface water guideline (429 mg/L)

New 2023 Groundwater Wells

-

Proposed 2023 Groundwater Wells

-

Existing 2022 Surface Water Locations

- ⊕ Most recent 2022 sulphate concentration above surface water guideline (429 mg/L)
- ⊕ Most recent 2022 sulphate concentration within surface water guideline (429 mg/L)

New 2023 Surface Water Locations

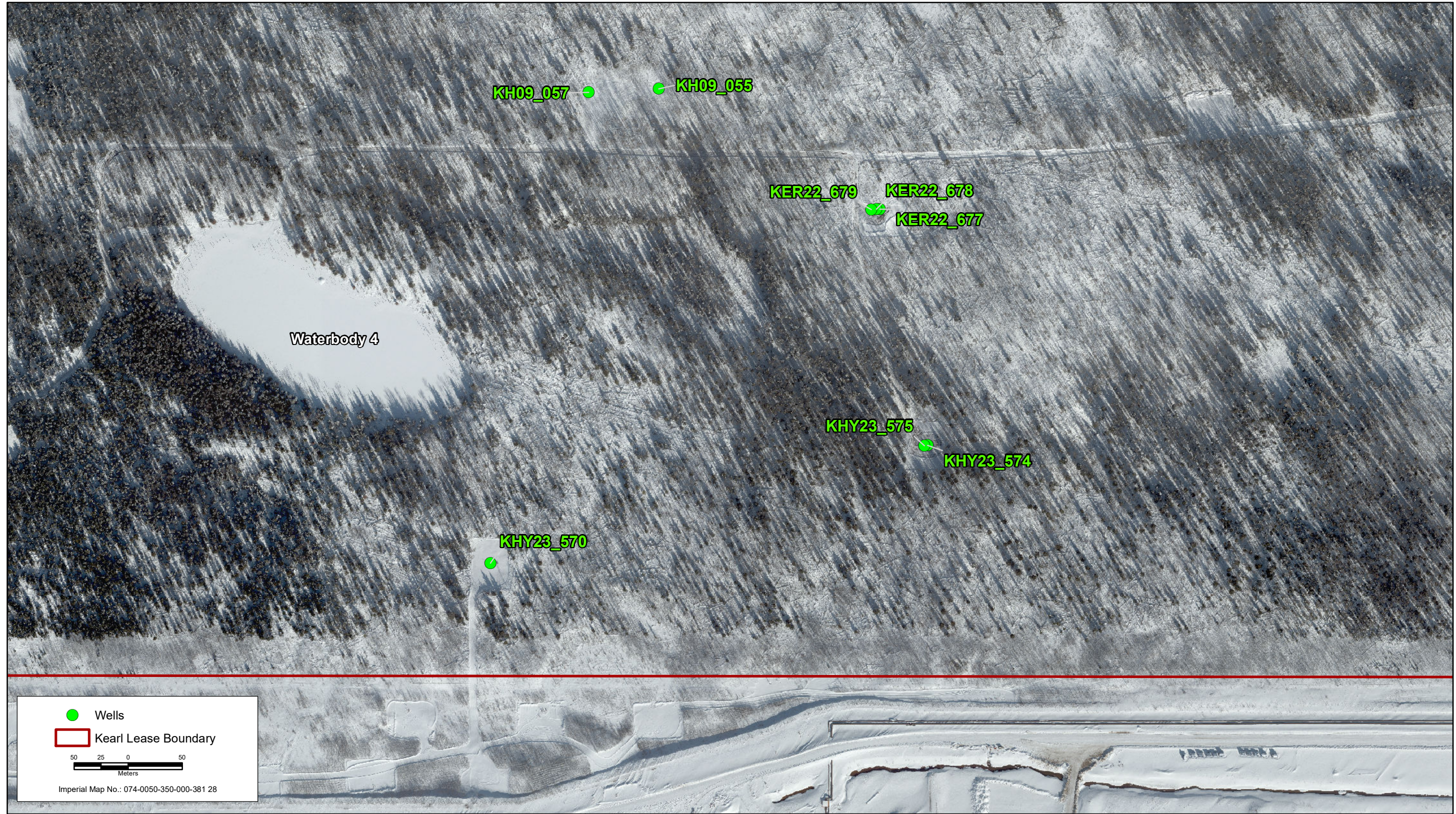
- ⊕

Infrastructure

- Ditch Lining
- Proposed Shallow Trench Area
- Proposed Access Road
- Wildlife Fencing
- Kearl Lease Boundary
- Water Act Fenceline

100 50 0 100
Meters
Imperial Map No.: 074-0050-350-000-381 10

<p>NOTES: - 50cm UAV imagery captured on May 5, 2022 and May 12, 2022</p>				<p align="center">IMPERIAL</p> <p align="center">KEARL – MINING WETA SOURCE CONTROL DESIGN AND PROPOSED 2023 MONITORING PROGRAM (SHALLOW) OVERVIEW MAP</p>			
PROJECTION	DATUM	CONTRACTOR NAME		CONTRACTOR MAP NUMBER			
UTM 12N	NAD83	--		Figure 6			
DRAWN	CHECK	DESIGN	APPR.	DATE	SCALE	IMPERIAL MAP NUMBER	REV.
SQ	AE	SQ	AE	23 03 27	1:7,500	074-0050-350-000-381 10	3



● Wells
 Kearl Lease Boundary

50 25 0 50
 Meters

Imperial Map No.: 074-0050-350-000-381 28

NOTES:
 - UAV imagery captured on March 17 and March 31.

		IMPERIAL			
		KEARL – MINING WELLS REPORTED ON APRIL 10, 2023 OVERVIEW MAP			
PROJECTION UTM 12N	DATUM NAD83	CONTRACTOR NAME --		CONTRACTOR MAP NUMBER -	
DRAWN SQ	CHECK JP	DESIGN SQ	APPR. JP	DATE 23 04 11	SCALE 1:3,500
				IMPERIAL MAP NUMBER 074-0050-350-000-381 28	REV. 0

Attachment 2: Data Summary Table

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090		Field				General																													
Monitoring Station	Date (dd-mmm-yyyy)	Field Temperature (deg C)	Field pH (pH units)	Field Electrical Conductivity (µS/cm)	Field Specific Conductivity (µS/cm)	Ion Balance % Difference (%)	Anion Sum (meq/L)	Cation Sum (meq/L)	Ammonia (as N) (mg/L)	Bicarbonate (mg/L)	Biochemical Oxygen Demand (BOD) (mg/L)	Bromide (mg/L)	Carbonate (CO ₃) (mg/L)	Chloride (mg/L)	Dissolved Inorganic Carbon (DIC) (mg/L)	Dissolved Organic Carbon (DOC) (mg/L)	Fluoride (mg/L)	Hardness (as CaCO ₃) (mg/L)	Hardness (as CaCO ₃):D (mg/L)	Hydrogen sulphide (mg/L)	Hydroxide (mg/L)	Nitrate (as N) (mg/L)	Nitrate (NO ₃) (mg/L)	Nitrate plus nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Nitrite (NO ₂) (mg/L)	Nitrogen (mg/L)	Orthophosphate (P) (mg/L)	PP Alkalinity (as CaCO ₃) (mg/L)	Sulphate (mg/L)	D-Sulphide (Acid Volatile) (mg/L)	Sulphide (Acid Volatile) (mg/L)	Total Alkalinity (as CaCO ₃) (mg/L)	Total Dissolved Solids Calc (mg/L)	
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	(6.5 - 8.5)	---	---	---	---	---	0.045	---	---	---	---	120	---	---	1.5	---	---	---	---	3	---	---	0.02	---	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	(6.5 - 8.5)	---	---	---	---	---	14.4	---	---	---	---	120	---	---	1.5	---	---	---	---	3	---	---	0.02	---	---	---	---	---	128	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	(6.5 - 8.5)	---	---	---	---	---	0.045	---	---	---	---	120	---	---	1.5	---	---	---	---	3	---	---	0.02	---	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	(6.5 - 8.5)	---	---	---	---	---	14.4	---	---	---	---	120	---	---	1.5	---	---	---	---	3	---	---	0.02	---	---	---	---	---	128	0.0019	0.0019	---	500
NODA Seeps GW																																			
KHY23_730	18-Mar-2023	---	---	---	---	0.42	10	10	0.040	480	---	0.19	< 1.0	37	---	---	0.33	390	---	0.012	< 1.0	0.27	1.2	0.36	0.089 ^{#1,4}	0.29	---	---	< 1.0	58	---	0.012 ^{#1,4}	390	520 ^{#1,4}	
	12-Apr-2023	---	---	---	---	0.74	8.5	8.4	0.027	450	---	0.058	< 1.0	4.7	---	---	0.31	380	---	0.48	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	50	---	0.45 ^{#1,4}	370	430	
KHY23_731	18-Mar-2023	---	---	---	---	0.61	6.4	6.4	0.072 ^{#1,4}	360	---	0.62	< 1.0	11	---	---	0.34	290	---	0.040	< 1.0	0.064	0.29	0.064	< 0.010	< 0.033	---	---	< 1.0	13	---	0.038 ^{#1,4}	290	310	
WETA Seeps GW																																			
KHY23_745	19-Mar-2023	---	---	---	---	2.7	6.5	6.1	0.018	360	---	0.049	< 1.0	2.9	---	---	0.14	290	---	0.17	< 1.0	0.045	0.20	0.057	0.012	0.040	---	---	< 1.0	22	---	0.16 ^{#1,4}	300	310	
KHY23_746	19-Mar-2023	---	---	---	---	1.4	10	9.9	0.058 ^{#1,4}	490	---	0.035	< 1.0	5.7	---	---	0.25	410	---	< 0.0020	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	96	---	< 0.0018	400	520 ^{#1,4}	
(Duplicate)	19-Mar-2023	---	---	---	---	1.2	10	10	0.054 ^{#1,4}	490	---	0.038	< 1.0	5.8	---	---	0.25	410	---	< 0.0020	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	98	---	< 0.0018	400	530 ^{#1,4}	
DP4 Seeps GW																																			
KHY23_756	17-Mar-2023	---	---	---	---	2.7	12	11	0.41 ^{#1,4}	460	---	0.24	< 1.0	7.4	---	---	0.18	340	---	0.14	< 1.0	0.033	0.15	0.033	< 0.010	< 0.033	---	---	< 1.0	180	---	0.13 ^{#1,4}	380	630 ^{#1,4}	
KHY23_757	17-Mar-2023	---	---	---	---	0.86	7.7	7.6	0.64 ^{#1,4}	470	---	0.0094	< 1.0	1.2	---	---	0.60	350	---	0.068	< 1.0	< 0.010	< 0.044	< 0.010	0.012	0.038	---	---	< 1.0	< 1.0	---	0.064 ^{#1,4}	380	360	
KHY23_758	17-Mar-2023	---	---	---	---	0.77	7.9	7.8	0.85 ^{#1,4}	470	---	0.014	< 1.0	1.4	---	---	0.75	320	---	0.0033	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	4.9	---	0.0031 ^{#1,4}	390	380	
	16-Apr-2023	---	---	---	---	4.7	7.5	8.3	1.1 ^{#1,4}	450	---	0.017	< 1.0	1.8	---	---	0.67	340	---	0.0044	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	< 1.0	---	0.0041 ^{#1,4}	370	370	
KHY23_762	15-Mar-2023	---	---	---	---	15	15	11	0.54 ^{#1,4}	530	---	0.20	< 1.0	39	---	---	0.50	130	---	5.4	< 1.0	1.3	5.6	1.3	0.065 ^{#1,4}	0.21	---	---	< 1.0	240 ^{#1,4}	---	5.1 ^{#1,4}	430	780 ^{#1,4}	
Deep Groundwater Off lease																																			
KER22_677	05-Mar-2023	---	---	---	---	5.2	15	17	0.64 ^{#1,4}	490	---	0.15	< 1.0	7.9	---	---	0.32	720	---	< 0.0020	< 1.0	0.023	0.10	0.023	< 0.010	< 0.033	---	---	< 1.0	350 ^{#1,4}	---	< 0.0018	400	910 ^{#1,4}	
KER22_678	18-Mar-2023	---	---	---	---	2.1	16	15	0.25 ^{#1,4}	540	---	0.088	< 1.0	5.9	---	---	0.27	640	---	0.019	< 1.0	0.011	0.049	0.011	< 0.010	< 0.033	---	---	< 1.0	310 ^{#1,4}	---	0.017 ^{#1,4}	450	860 ^{#1,4}	
KER22_679	19-Mar-2023	---	---	---	---	0.71	12	12	0.18 ^{#1,4}	520	---	0.035	< 1.0	2.6	---	---	0.25	550	---	< 0.0020	< 1.0	0.063	0.28	0.078	0.014	0.047	---	---	< 1.0	150	---	< 0.0018	420	610 ^{#1,4}	
KH09-055	09-Oct-2022	4.9	7.07	724	---	0.86	13	13	0.36 ^{#1,4}	450	---	0.045	< 1.0	1.4	---	---	0.33	610	---	0.58	< 1.0	< 0.050	< 0.22	< 0.050	< 0.010	< 0.033	---	---	< 1.0	250 ^{#1,4}	---	0.54 ^{#1,4}	370	710 ^{#1,4}	
KH09-057	12-Sep-2022	4.5	7.04	849	---	0.35	---	---	0.056 ^{#1,4}	510	---	0.095	< 1.0	8.3	---	---	0.29	650	---	< 0.0020	< 1.0	0.011	0.049	0.011	< 0.010	< 0.033	---	0.0033	< 1.0	350 ^{#1,4}	---	< 0.0018	420	900 ^{#1,4}	
	09-Oct-2022	4.6	7.14	818	---	2.4	14	15	0.33 ^{#1,4}	490	---	0.15	< 1.0	9.2	---	---	0.29	600	---	0.019	< 1.0	0.11	0.51	0.11	< 0.010	< 0.033	---	---	< 1.0	290 ^{#1,4}	---	0.018 ^{#1,4}	400	820 ^{#1,4}	
KHY23_570	11-Mar-2023	---	---	---	---	1.8	21	21	0.022	430	---	0.20	< 1.0	20	---	---	0.56	590	---	0.0049	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	660 ^{#3,6}	---	0.0046 ^{#3,6}	350	1300 ^{#3,6}	
(Duplicate)	11-Mar-2023	---	---	---	---	1.1	21	21	0.023	420	---	0.20	< 1.0	21	---	---	0.56	600	---	0.0028	< 1.0	< 0.010	< 0.044	< 0.010	< 0.010	< 0.033	---	---	< 1.0	660 ^{#3,6}	---	0.0027 ^{#3,6}	350	1300 ^{#3,6}	
KHY23_574	12-Mar-2023	---	---	---	---	3.0	14	14	0.14 ^{#1,4}	590	---	0.052	< 1.0	2.8	---	---	0.26	670	---	0.054	< 1.0	0.016	0.071	0.016	< 0.010	< 0.033	---	---	< 1.0	190 ^{#3,6}	---	0.051 ^{#1,3,4,6}	480	730 ^{#1,3,4,6}	
KHY23_575	12-Mar-2023	---	---	---	---	0.35	11	11	0.19 ^{#1,4}	440	---	0.034	< 1.0	1.7	---	---	0.33	490	---	0.0054	< 1.0	0.10	0.45	0.10	< 0.010	< 0.033	---	---	< 1.0	160 ^{#3,6}	---	0.0050 ^{#1,3,4,6}	360	570 ^{#1,3,4,6}	

NOTES:

- in guideline row(s) denotes no criteria for that parameter.
- in detail data row(s) denotes parameter not analyzed.
- Highlighting indicates parameters above applied guideline/criteria.
- Highlighting indicates non-detect parameters above applied guideline/criteria.
- Highlighting indicates parameters at applied guideline/criteria.
- Superscript #1 denotes values exceeding (AEP Alberta Tier 1, August 2022, Natural Land Use Fine-Grained Criteria, Groundwater Remediation, Firebag River Receiving Body of Water)
 - Ammonia (as N): AEP Alberta Tier 1, August 2022, Natural Land Use Fine-Grained Criteria, Groundwater Remediation, Firebag River Receiving Body of Water. Assumes a maximum pH of 9.1 and maximum temperature of 21 degrees Celsius in receiving water body.
 - Nitrite (as N): Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes a chloride concentration of less than 2 mg/L in receiving water body.
 - Sulphate: Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.
 - Aluminum:D: Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes a minimum pH of 5.6 in receiving water body.

< X
X

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Field														General																	
		Field Temperature (deg C)	Field pH (pH units)	Field Electrical Conductivity (µS/cm)	Field Specific Conductivity (µS/cm)	Ion Balance % Difference (%)	Anion Sum (meq/L)	Cation Sum (meq/L)	Ammonia (as N) (mg/L)	Bicarbonate (mg/L)	Biochemical Oxygen Demand (BOD) (mg/L)	Bromide (mg/L)	Carbonate (CO ₃) (mg/L)	Chloride (mg/L)	Dissolved Inorganic Carbon (DIC) (mg/L)	Dissolved Organic Carbon (DOC) (mg/L)	Fluoride (mg/L)	Hardness (as CaCO ₃) (mg/L)	Hardness (as CaCO ₃):D (mg/L)	Hydrogen sulphide (mg/L)	Hydroxide (mg/L)	Nitrate (as N) (mg/L)	Nitrate (NO ₃) (mg/L)	Nitrate plus nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Nitrite (NO ₂) (mg/L)	Nitrogen (mg/L)	Orthophosphate (P) (mg/L)	PP Alkalinity (as CaCO ₃) (mg/L)	Sulphate (mg/L)	D-Sulphide (Acid Volatile) (mg/L)	Sulphide (Acid Volatile) (mg/L)	Total Alkalinity (as CaCO ₃) (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	128	0.0019	0.0019	---	500	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	218	0.0019	0.0019	---	500	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	128	0.0019	0.0019	---	500	

Aluminum:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes a minimum pH of 5.6 in receiving water body.

Cadmium:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Cadmium:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Lead:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Lead:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Nickel:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Nickel:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

7. Superscript #2 denotes values exceeding (AEP Alberta Tier 1, August 2022, Natural Land Use Fine-Grained Criteria, Groundwater Remediation, Waterbody 3 Receiving Body of Water)

Ammonia (as N):
AEP Alberta Tier 1, August 2022, Natural Land Use Fine-Grained Criteria, Groundwater Remediation, Waterbody 3 Receiving Body of Water. Assumes a maximum pH of 8.2 and maximum temperature of 23 degrees Celsius in receiving water body.

Nitrite (as N):
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes a chloride concentration of less than 2 mg/L in receiving water body.

Sulphate:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Aluminum:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes a minimum pH of 6.4 in receiving water body.

Aluminum:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes a minimum pH of 6.4 in receiving water body.

Cadmium:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Cadmium:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Lead:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Lead:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Nickel:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018). Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Nickel:T:

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Field														General																	
		Field Temperature (deg C)	Field pH	Field Electrical Conductivity (µS/cm)	Field Specific Conductivity (µS/cm)	Ion Balance % Difference (%)	Anion Sum (meq/L)	Cation Sum (meq/L)	Ammonia (as N) (mg/L)	Bicarbonate (mg/L)	Biochemical Oxygen Demand (BOD) (mg/L)	Bromide (mg/L)	Carbonate (CO ₃) (mg/L)	Chloride (mg/L)	Dissolved Inorganic Carbon (DIC) (mg/L)	Dissolved Organic Carbon (DOC) (mg/L)	Fluoride (mg/L)	Hardness (as CaCO ₃) (mg/L)	Hardness (as CaCO ₃):D (mg/L)	Hydrogen sulphide (mg/L)	Hydroxide (mg/L)	Nitrate (as N) (mg/L)	Nitrate (NO ₃) (mg/L)	Nitrate plus nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Nitrite (NO ₂) (mg/L)	Nitrogen (mg/L)	Orthophosphate (P) (mg/L)	PP Alkalinity (as CaCO ₃) (mg/L)	Sulphate (mg/L)	D-Sulphide (Acid Volatile) (mg/L)	Sulphide (Acid Volatile) (mg/L)	Total Alkalinity (as CaCO ₃) (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	128	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	128	0.0019	0.0019	---	500

Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

8. Superscript #3 denotes values exceeding
(AEP Alberta Tier 1, August 2022, Natural Land Use Fine-Grained Criteria, Groundwater Remediation, Waterbody 4 Receiving Body of Water)

Ammonia (as N):
AEP Alberta Tier 1, August 2022, Natural Land Use Fine-Grained Criteria, Groundwater Remediation, Waterbody 4 Receiving Body of Water.
Assumes a maximum pH of 6.58 and maximum temperature of 14 degrees Celsius in receiving water body.

Nitrite (as N):
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a chloride concentration of less than 2 mg/L in receiving water body.

Sulphate:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Aluminum:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 5.86 in receiving water body.

Aluminum:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 5.86 in receiving water body.

Cadmium:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Cadmium:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Lead:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Lead:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Nickel:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Nickel:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

9. Superscript #4 denotes values exceeding
(AEP Alberta Tier 1, August 2022, Natural Land Use Coarse-Grained Criteria, Groundwater Remediation, Firebag River Receiving Body of Water)

Ammonia (as N):
AEP Alberta Tier 1, August 2022, Natural Land Use Coarse-Grained Criteria, Groundwater Remediation, Firebag River Receiving Body of Water.
Assumes a maximum pH of 9.1 and maximum temperature of 21 degrees Celsius in receiving water body.

Nitrite (as N):
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a chloride concentration of less than 2 mg/L in receiving water body.

Sulphate:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Aluminum:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 5.6 in receiving water body.

Aluminum:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 5.6 in receiving water body.

Cadmium:D:

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Field														General																	
		Field Temperature (deg C)	Field pH	Field Electrical Conductivity (µS/cm)	Field Specific Conductivity (µS/cm)	Ion Balance % Difference (%)	Anion Sum (meq/L)	Cation Sum (meq/L)	Ammonia (as N) (mg/L)	Bicarbonate (mg/L)	Biochemical Oxygen Demand (BOD) (mg/L)	Bromide (mg/L)	Carbonate (CO ₃) (mg/L)	Chloride (mg/L)	Dissolved Inorganic Carbon (DIC) (mg/L)	Dissolved Organic Carbon (DOC) (mg/L)	Fluoride (mg/L)	Hardness (as CaCO ₃) (mg/L)	Hardness (as CaCO ₃):D (mg/L)	Hydrogen sulphide (mg/L)	Hydroxide (mg/L)	Nitrate (as N) (mg/L)	Nitrate (NO ₃) (mg/L)	Nitrate plus nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Nitrite (NO ₂) (mg/L)	Nitrogen (mg/L)	Orthophosphate (P) (mg/L)	PP Alkalinity (as CaCO ₃) (mg/L)	Sulphate (mg/L)	D-Sulphide (Acid Volatile) (mg/L)	Sulphide (Acid Volatile) (mg/L)	Total Alkalinity (as CaCO ₃) (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	128	0.0019	0.0019	---	500	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	218	0.0019	0.0019	---	500	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	128	0.0019	0.0019	---	500	

Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Cadmium:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Lead:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Lead:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Nickel:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

Nickel:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 42 mg/L CaCO₃ in receiving water body.

10. Superscript #5 denotes values exceeding
(AEP Alberta Tier 1, August 2022, Natural Land Use Coarse-Grained Criteria, Groundwater Remediation, Waterbody 3 Receiving Body of Water)

Ammonia (as N):
AEP Alberta Tier 1, August 2022, Natural Land Use Coarse-Grained Criteria, Groundwater Remediation, Waterbody 3 Receiving Body of Water.
Assumes a maximum pH of 8.2 and maximum temperature of 23 degrees Celsius in receiving water body.

Nitrite (as N):
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a chloride concentration of less than 2 mg/L in receiving water body.

Sulphate:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Aluminum:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 6.4 in receiving water body.

Aluminum:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 6.4 in receiving water body.

Cadmium:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Cadmium:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Lead:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Lead:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Nickel:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

Nickel:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 48 mg/L CaCO₃ in receiving water body.

11. Superscript #6 denotes values exceeding
(AEP Alberta Tier 1, August 2022, Natural Land Use Coarse-Grained Criteria, Groundwater Remediation, Waterbody 4 Receiving Body of Water)

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Field														General																			
		Field Temperature (deg C)	Field pH (pH units)	Field Electrical Conductivity (µS/cm)	Field Specific Conductivity (µS/cm)	Ion Balance % Difference (%)	Anion Sum (meq/L)	Cation Sum (meq/L)	Ammonia (as N) (mg/L)	Bicarbonate (mg/L)	Biochemical Oxygen Demand (BOD) (mg/L)	Bromide (mg/L)	Carbonate (CO ₃) (mg/L)	Chloride (mg/L)	Dissolved Inorganic Carbon (DIC) (mg/L)	Dissolved Organic Carbon (DOC) (mg/L)	Fluoride (mg/L)	Hardness (as CaCO ₃) (mg/L)	Hardness (as CaCO ₃):D (mg/L)	Hydrogen sulphide (mg/L)	Hydroxide (mg/L)	Nitrate (as N) (mg/L)	Nitrate (NO ₃) (mg/L)	Nitrate plus nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Nitrite (NO ₂) (mg/L)	Nitrogen (mg/L)	Orthophosphate (P) (mg/L)	PP Alkalinity (as CaCO ₃) (mg/L)	Sulphate (mg/L)	D-Sulphide (Acid Volatile) (mg/L)	Sulphide (Acid Volatile) (mg/L)	Total Alkalinity (as CaCO ₃) (mg/L)	Total Dissolved Solids Calc (mg/L)	
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	---	218	0.0019	0.0019	---	500
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	128	0.0019	0.0019	---	500	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	(6.5 - 8.5)	---	---	---	---	0.045	---	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	218	0.0019	0.0019	---	500	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #6		---	(6.5 - 8.5)	---	---	---	---	14.4	---	---	---	---	120	---	---	1.5	---	---	---	---	---	3	---	---	0.02	---	---	---	---	128	0.0019	0.0019	---	500	

Ammonia (as N):
AEP Alberta Tier 1, August 2022, Natural Land Use Coarse-Grained Criteria, Groundwater Remediation, Waterbody 4 Receiving Body of Water.
Assumes a maximum pH of 6.58 and maximum temperature of 14 degrees Celsius in receiving water body.

Nitrite (as N):
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a chloride concentration of less than 2 mg/L in receiving water body.

Sulphate:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Aluminum:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 5.86 in receiving water body.

Aluminum:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes a minimum pH of 5.86 in receiving water body.

Cadmium:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Cadmium:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Lead:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Lead:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Nickel:D:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Nickel:T:
Guideline was adopted from AEP Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018).
Assumes hardness of 30 mg/L CaCO₃ in receiving water body.

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Total Dissolved Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Filter and HNO ₃ Preservation (none)	Turbidity (ntu)	pH (pH Units)	Electrical Conductivity (uS/cm)	Electrical Conductivity (Calculated) (uS/cm)	Hydrocarbons and Naphthenic Acids																				
											Benzene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	Naphthenic acids (mg/L)	o-Xylene (mg/L)	PHC F1 (C6-C10) (mg/L)	PHC F1 (C6-C10) - BTEX (mg/L)	PHC F2 (C10-C16) (mg/L)	PHC F3 (C16-C34) (mg/L)	PHC F4 (C34-C50) (mg/L)	Toluene (mg/L)	Xylenes-Total (mg/L)	Aluminum:D (mg/L)	Aluminum:T (mg/L)	Antimony:D (mg/L)	Antimony:T (mg/L)	Arsenic:D (mg/L)	Arsenic:T (mg/L)	Barium:D (mg/L)	Barium:T (mg/L)	Beryllium:D (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---	
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---	
NODA Seeps GW																															
KHY23_730	18-Mar-2023	530 #1,4	---	0.054	---	---	---	7.70	890	860	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	0.00054	< 0.00089	< 0.015 #1,4	1.3 #1,4	< 0.0030	< 0.00060	< 0.0010	0.0013	0.10	0.12	< 0.0050
	12-Apr-2023	460	---	0.91	---	---	---	7.34	730	710	< 0.00040	< 0.00040	< 0.00080	2.8	< 0.00040	< 0.1	< 0.1	0.41	---	---	< 0.00040	< 0.00089	0.022 #1,4	26 #1,4	< 0.00060	< 0.0012	0.00070	0.017 #1,4	0.089	0.45	< 0.0010
KHY23_731	18-Mar-2023	320	---	< 0.30	---	---	---	7.84	560	550	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	0.46	---	---	< 0.00040	< 0.00089	< 0.015 #1,4	2.6 #1,4	< 0.0030	< 0.00060	< 0.0010	0.0022	0.096	0.13	< 0.0050
WETA Seeps GW																															
KHY23_745	19-Mar-2023	360	---	0.62	---	---	---	7.88	540	540	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	13 #1,4	< 0.00060	< 0.0012	0.00039	0.0096 #1,4	0.059	0.20	< 0.0010
KHY23_746	19-Mar-2023	560 #1,4	---	0.0031	---	---	---	8.12	850	850	< 0.00040	< 0.00040	< 0.00080	2.2	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	0.049 #1,4	< 0.00060	< 0.00060	< 0.00020	0.00021	0.12	0.11	< 0.0010
(Duplicate)	19-Mar-2023	550 #1,4	---	< 0.0030	---	---	---	8.13	850	850	< 0.00040	< 0.00040	< 0.00080	2.3	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	0.059 #1,4	< 0.00060	< 0.00060	< 0.00020	< 0.00020	0.12	0.12	< 0.0010
DP4 Seeps GW																															
KHY23_756	17-Mar-2023	610 #1,4	---	< 0.30	---	---	---	7.42	990	980	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.015 #1,4	5.6 #1,4	< 0.0030	< 0.00060	< 0.0010	0.0038	0.15	0.26	< 0.0050
KHY23_757	17-Mar-2023	410	---	0.28	---	---	---	8.23	640	630	< 0.00040	< 0.00040	< 0.00080	3.0	< 0.00040	< 0.1	< 0.1	0.27	---	---	< 0.00040	< 0.00089	< 0.015 #1,4	7.3 #1,4	< 0.0030	< 0.00060	< 0.0010	0.0048	0.21	0.30	< 0.0050
KHY23_758	17-Mar-2023	400	---	0.075	---	---	---	7.93	670	640	< 0.00040	< 0.00040	< 0.00080	4.8	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.015 #1,4	0.45 #1,4	< 0.0030	< 0.00060	< 0.0010	0.00028	0.14	0.16	< 0.0050
	16-Apr-2023	370	---	0.081	---	---	---	7.85	660	640	< 0.00040	< 0.00040	< 0.00080	4.8	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	0.0083	0.39 #1,4	< 0.00060	< 0.00060	0.00022	0.00033	0.14	0.14	< 0.0010
KHY23_762	15-Mar-2023	660 #1,4	---	9.3	---	---	---	8.01	1100	1100	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	2.9 #1,4	---	---	0.00046	< 0.00089	0.0061	170 #1,4	0.00088	< 0.0012	0.0011	0.13 #1,4	0.055	2.5 #1,4	< 0.0010
Deep Groundwater Off lease																															
KER22_677	05-Mar-2023	960 #1,4	---	0.030	---	---	---	8.12	1300	1400	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	0.025 #1,4	< 0.00060	< 0.00060	< 0.00020	< 0.00020	0.32	0.32	< 0.0010
KER22_678	18-Mar-2023	900 #1,4	---	0.027	---	---	---	8.01	1200	1300	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	2.2 #1,4	< 0.00060	< 0.00060	< 0.00020	0.00042	0.27	0.31	< 0.0010
KER22_679	19-Mar-2023	670 #1,4	---	0.0071	---	---	---	7.95	930	990	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	0.057 #1,4	< 0.00060	< 0.00060	0.0013	0.0016	0.21	0.20	< 0.0010
KH09-055	09-Oct-2022	830 #1,4	---	0.20	---	---	---	7.55	1100	1100	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	0.0034	0.023 #1,4	< 0.00060	< 0.00060	0.00080	0.0012	0.095	0.098	< 0.0010
KH09-057	12-Sep-2022	900 #1,4	---	---	---	---	---	7.46	1300	1400	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	0.0038	---	< 0.00060	---	0.00026	---	0.072	---	< 0.0010
	09-Oct-2022	870 #1,4	---	0.52	---	---	---	7.66	1300	1300	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	0.10	---	---	< 0.00040	< 0.00089	0.0042	1.6 #1,4	< 0.00060	< 0.0012	0.00021	0.012 #1,4	0.085	0.15	< 0.0010
KHY23_570	11-Mar-2023	1300 #3,6	---	< 0.0030	---	---	---	8.23	1800	1800	< 0.00040	< 0.00040	< 0.00080	5.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	0.0037	0.52 #3,6	< 0.00060	< 0.00060	0.00073	0.0010	0.15	0.15	< 0.0010
(Duplicate)	11-Mar-2023	1300 #3,6	---	0.0045	---	---	---	8.23	1800	1800	< 0.00040	< 0.00040	< 0.00080	5.1	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	0.39 #3,6	< 0.00060	< 0.00060	0.00074	0.00096	0.14	0.16	< 0.0010
KHY23_574	12-Mar-2023	780 #1,3,4,6	---	0.13	---	---	---	7.90	1100	1200	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	0.22	---	---	< 0.00040	< 0.00089	< 0.0030	3.7 #1,3,4,6	< 0.00060	< 0.00060	< 0.00020	0.0024	0.22	0.26	< 0.0010
KHY23_575	12-Mar-2023	570 #1,3,4,6	---	0.0057	---	---	---	8.07	870	920	< 0.00040	< 0.00040	< 0.00080	< 2.0	< 0.00040	< 0.1	< 0.1	< 0.10	---	---	< 0.00040	< 0.00089	< 0.0030	0.24 #1,3,4,6	< 0.00060	0.00064	0.00043	0.00044	0.24	0.23	< 0.0010

NOTES:

< X
X

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Total Dissolved Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Filter and HNO ₃ Preservation (none)	Turbidity (ntu)	pH (pH Units)	Electrical Conductivity (uS/cm)	Electrical Conductivity (Calculated) (uS/cm)	Hydrocarbons and Naphthenic Acids										Aluminum:D (mg/L)	Aluminum:T (mg/L)	Antimony:D (mg/L)	Antimony:T (mg/L)	Arsenic:D (mg/L)	Arsenic:T (mg/L)	Barium:D (mg/L)	Barium:T (mg/L)	Beryllium:D (mg/L)	
											Benzene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	Naphthenic acids (mg/L)	o-Xylene (mg/L)	PHC F1 (C6-C10) (mg/L)	PHC F1 (C6-C10) - BTEX (mg/L)	PHC F2 (C10-C16) (mg/L)	PHC F3 (C16-C34) (mg/L)	PHC F4 (C34-C50) (mg/L)										Toluene (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Total Dissolved Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Filter and HNO ₃ Preservation (none)	Turbidity (ntu)	pH (pH Units)	Electrical Conductivity (uS/cm)	Electrical Conductivity (Calculated) (uS/cm)	Hydrocarbons and Naphthenic Acids										Aluminum:D (mg/L)	Aluminum:T (mg/L)	Antimony:D (mg/L)	Antimony:T (mg/L)	Arsenic:D (mg/L)	Arsenic:T (mg/L)	Barium:D (mg/L)	Barium:T (mg/L)	Beryllium:D (mg/L)	
											Benzene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	Naphthenic acids (mg/L)	o-Xylene (mg/L)	PHC F1 (C6-C10) (mg/L)	PHC F1 (C6-C10) - BTEX (mg/L)	PHC F2 (C10-C16) (mg/L)	PHC F3 (C16-C34) (mg/L)	PHC F4 (C34-C50) (mg/L)										Toluene (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Total Dissolved Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Filter and HNO ₃ Preservation (none)	Turbidity (ntu)	pH (pH Units)	Electrical Conductivity (uS/cm)	Electrical Conductivity (Calculated) (uS/cm)	Hydrocarbons and Naphthenic Acids																			
											Benzene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	Naphthenic acids (mg/L)	o-Xylene (mg/L)	PHC F1 (C6-C10) (mg/L)	PHC F1 (C6-C10) - BTEX (mg/L)	PHC F2 (C10-C16) (mg/L)	PHC F3 (C16-C34) (mg/L)	PHC F4 (C34-C50) (mg/L)	Toluene (mg/L)	Xylenes-Total (mg/L)	Aluminum:D (mg/L)	Aluminum:T (mg/L)	Antimony:D (mg/L)	Antimony:T (mg/L)	Arsenic:D (mg/L)	Arsenic:T (mg/L)	Barium:D (mg/L)	Barium:T (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Total Dissolved Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Filter and HNO ₃ Preservation (none)	Turbidity (ntu)	pH (pH Units)	Electrical Conductivity (uS/cm)	Electrical Conductivity (Calculated) (uS/cm)	Hydrocarbons and Naphthenic Acids										Aluminum:D (mg/L)	Aluminum:T (mg/L)	Antimony:D (mg/L)	Antimony:T (mg/L)	Arsenic:D (mg/L)	Arsenic:T (mg/L)	Barium:D (mg/L)	Barium:T (mg/L)	Beryllium:D (mg/L)	
											Benzene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	Naphthenic acids (mg/L)	o-Xylene (mg/L)	PHC F1 (C6-C10) (mg/L)	PHC F1 (C6-C10) - BTEX (mg/L)	PHC F2 (C10-C16) (mg/L)	PHC F3 (C16-C34) (mg/L)	PHC F4 (C34-C50) (mg/L)										Toluene (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.024	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.012	0.012	0.006	0.006	0.005	0.005	2	2	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		500	---	---	---	---	---	(6.5 - 8.5)	---	---	0.005	0.0016	---	---	---	2.2	1.1	---	---	0.021	0.02	0.018	0.018	0.006	0.006	0.005	0.005	2	2	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Beryllium:T (mg/L)	Bismuth:D (mg/L)	Bismuth:T (mg/L)	Boron:D (mg/L)	Boron:T (mg/L)	Cadmium:D (mg/L)	Cadmium:T (mg/L)	Calcium:D (mg/L)	Calcium:T (mg/L)	Chromium:D (mg/L)	Chromium:T (mg/L)	Cobalt:D (mg/L)	Cobalt:T (mg/L)	Copper:D (mg/L)	Copper:T (mg/L)	Iron:D (mg/L)	Iron:T (mg/L)	Lead:D (mg/L)	Lead:T (mg/L)	Lithium:D (mg/L)	Lithium:T (mg/L)	Magnesium:D (mg/L)	Magnesium:T (mg/L)	Manganese:D (mg/L)	Manganese:T (mg/L)	Mercury:D (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #6		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
NODA Seeps GW																											
KHY23_730	18-Mar-2023	< 0.0010	---	---	0.043	0.043	0.0013 #1.4	0.0015 #1.4	110	100	< 0.0050	0.0019	0.0082	0.011	0.0062	0.0087 #1.4	0.090	1.5 #1.4	0.0019 #1.4	0.0032 #1.4	< 0.020	< 0.020	31	29	0.52 #1.4	0.52 #1.4	0.000065 #1.4
	12-Apr-2023	0.0027	---	---	0.046	0.076	0.00041 #1.4	0.0011 #1.4	100	150	< 0.0010	0.044	0.0071	0.028	0.0014	0.043 #1.4	0.36 #1.4	48 #1.4	0.0010 #1.4	0.032 #1.4	< 0.020	0.039	31	46	0.93 #1.4	1.8 #1.4	< 0.000019
KHY23_731	18-Mar-2023	< 0.0010	---	---	0.057	0.061	< 0.00010 #1.4	0.00015 #1.4	76	78	< 0.0050	0.0059	0.0025	0.0051	< 0.0050	0.0059	0.17	4.7 #1.4	< 0.0010	0.0027 #1.4	< 0.020	< 0.020	24	25	0.28 #1.4	0.36 #1.4	< 0.000019
WETA Seeps GW																											
KHY23_745	19-Mar-2023	< 0.0020	---	---	< 0.020	0.034	0.000063	0.00018 #1.4	71	130	< 0.0010	0.029	0.00049	0.010	0.0022	0.028 #1.4	< 0.060	34 #1.4	< 0.00020	0.013 #1.4	< 0.020	< 0.020	27	53	0.062 #1.4	0.46 #1.4	< 0.000019
KHY23_746	19-Mar-2023	< 0.0010	---	---	0.14	0.14	0.000022	< 0.000020	100	100	< 0.0010	< 0.0010	0.0013	0.0013	< 0.0010	< 0.0010	1.7 #1.4	2.8 #1.4	< 0.00020	< 0.00020	< 0.020	0.025	37	36	0.43 #1.4	0.45 #1.4	< 0.000019
(Duplicate)	19-Mar-2023	< 0.0010	---	---	0.14	0.15	< 0.000020	0.000024	100	100	< 0.0010	< 0.0010	0.0013	0.0014	0.0028	< 0.0010	2.0 #1.4	3.0 #1.4	< 0.00020	< 0.00020	< 0.020	< 0.020	37	40	0.43 #1.4	0.46 #1.4	< 0.000019
DP4 Seeps GW																											
KHY23_756	17-Mar-2023	< 0.0010	---	---	0.10	0.11	< 0.00010 #1.4	0.00051 #1.4	82	90	< 0.0050	0.0063	0.0023	0.0066	< 0.0050	0.0077 #1.4	0.41 #1.4	10 #1.4	< 0.0010	0.0092 #1.4	0.056	0.057	32	36	0.78 #1.4	0.93 #1.4	< 0.000019
KHY23_757	17-Mar-2023	< 0.0010	---	---	0.31	0.32	< 0.00010 #1.4	0.00017 #1.4	72	85	< 0.0050	0.014	< 0.0015	0.0084	< 0.0050	0.012 #1.4	< 0.060	17 #1.4	< 0.0010	0.0076 #1.4	0.071	0.080	42	50	0.12 #1.4	0.41 #1.4	< 0.000019
KHY23_758	17-Mar-2023	< 0.0010	---	---	0.54	0.55	< 0.00010 #1.4	< 0.000020	61	65	< 0.0050	< 0.0010	< 0.0015	0.00043	< 0.0050	< 0.0010	0.82 #1.4	1.8 #1.4	< 0.0010	0.00031	0.090	0.084	41	42	0.057 #1.4	0.069 #1.4	< 0.000019
	16-Apr-2023	< 0.0010	---	---	0.56	0.58	< 0.000020	< 0.000020	66	60	< 0.0010	< 0.0010	< 0.00030	0.00030	< 0.0010	< 0.0010	1.3 #1.4	1.7 #1.4	< 0.00020	0.00023	0.097	0.087	42	38	0.057 #1.4	0.072 #1.4	< 0.000019
KHY23_762	15-Mar-2023	0.020	---	---	0.031	0.25	0.00041 #1.4	0.00031 #1.4	33	300	< 0.0010	0.37 #1.4	0.00065	0.15	0.0034	0.31 #1.4	< 0.060	400 #1.4	0.00065	0.25 #1.4	0.056	0.31	11	140	0.034 #1.4	5.0 #1.4	0.000027
Deep Groundwater Off lease																											
KER22_677	05-Mar-2023	< 0.0010	---	---	0.24	0.23	< 0.000020	< 0.000020	190	180	< 0.0010	< 0.0010	0.00070	0.00080	0.0015	< 0.0010	5.4 #1.4	8.0 #1.4	< 0.00020	< 0.00020	0.041	0.040	58	57	0.88 #1.4	0.96 #1.4	< 0.000019
KER22_678	18-Mar-2023	< 0.0010	---	---	0.16	0.16	0.000026	0.000026	170	170	< 0.0010	< 0.0010	0.0024	0.0027	0.0013	< 0.0010	10 #1.4	20 #1.4	< 0.00020	0.0015 #1.4	0.052	0.057	53	55	1.0 #1.4	1.2 #1.4	< 0.000019
KER22_679	19-Mar-2023	< 0.0010	---	---	0.12	0.13	0.000020	< 0.000020	130	140	< 0.0010	< 0.0010	0.0018	0.0020	0.0013	< 0.0010	0.078	0.38 #1.4	< 0.00020	< 0.00020	0.061	0.061	51	52	0.58 #1.4	0.63 #1.4	< 0.000019
KH09-055	09-Oct-2022	< 0.0010	---	---	0.072	0.078	< 0.000020	< 0.000020	180	190	< 0.0010	0.0029	< 0.00030	0.00061	< 0.0010	0.0016	6.8 #1.4	11 #1.4	< 0.00020	< 0.00020	0.039	0.039	36	38	0.32 #1.4	0.37 #1.4	< 0.000019
KH09-057	12-Sep-2022	---	---	---	0.36	---	0.000030	---	170	---	< 0.0010	---	0.0017	---	< 0.0010	---	0.52 #1.4	---	< 0.00020	---	0.045	---	51	---	0.23 #1.4	---	< 0.000019
	09-Oct-2022	< 0.0020	---	---	0.40	0.39	0.000021	0.00015 #1.4	160	180	< 0.0010	0.028	0.0053	0.013	< 0.0010	0.0094 #1.4	0.83 #1.4	34 #1.4	< 0.00020	0.0038 #1.4	0.045	0.048	48	55	0.32 #1.4	0.72 #1.4	< 0.000019
KHY23_570	11-Mar-2023	< 0.0010	---	---	1.3	1.3	0.000038	0.000046	160	150	< 0.0010	0.0026	0.0023	0.0032	0.0024	< 0.0010	1.8 #3.6	3.2 #3.6	< 0.00020	0.00034	0.033	0.026	47	45	0.34 #3.6	0.37 #3.6	0.000021
(Duplicate)	11-Mar-2023	< 0.0010	---	---	1.3	1.3	0.000038	0.000050	160	150	< 0.0010	0.0026	0.0024	0.0025	0.0011	0.0012	1.8 #3.6	3.2 #3.6	< 0.00020	0.00038	0.034	0.026	48	46	0.34 #3.6	0.37 #3.6	< 0.000019
KHY23_574	12-Mar-2023	< 0.0010	---	---	0.15	0.16	0.000024	0.000076 #1.3,4,6	170	180	< 0.0010	0.0074	0.00088	0.0039	< 0.0010	0.0067	0.53 #1.3,4,6	9.2 #1.3,4,6	< 0.00020	0.0044 #1.3,4,6	0.070	0.076	61	63	0.77 #1.3,4,6	1.0 #1.3,4,6	< 0.000019
KHY23_575	12-Mar-2023	< 0.0010	---	---	0.077	0.072	< 0.000020	0.000036	130	130	< 0.0010	< 0.0010	0.00081	0.00096	< 0.0010	< 0.0010	1.4 #1.3,4,6	2.1 #1.3,4,6	< 0.00020	0.00035	0.037	0.041	41	39	0.44 #1.3,4,6	0.45 #1.3,4,6	< 0.000019

NOTES:

< X
X

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Beryllium:T (mg/L)	Bismuth:D (mg/L)	Bismuth:T (mg/L)	Boron:D (mg/L)	Boron:T (mg/L)	Cadmium:D (mg/L)	Cadmium:T (mg/L)	Calcium:D (mg/L)	Calcium:T (mg/L)	Chromium:D (mg/L)	Chromium:T (mg/L)	Cobalt:D (mg/L)	Cobalt:T (mg/L)	Copper:D (mg/L)	Copper:T (mg/L)	Iron:D (mg/L)	Iron:T (mg/L)	Lead:D (mg/L)	Lead:T (mg/L)	Lithium:D (mg/L)	Lithium:T (mg/L)	Magnesium:D (mg/L)	Magnesium:T (mg/L)	Manganese:D (mg/L)	Manganese:T (mg/L)	Mercury:D (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Beryllium:T (mg/L)	Bismuth:D (mg/L)	Bismuth:T (mg/L)	Boron:D (mg/L)	Boron:T (mg/L)	Cadmium:D (mg/L)	Cadmium:T (mg/L)	Calcium:D (mg/L)	Calcium:T (mg/L)	Chromium:D (mg/L)	Chromium:T (mg/L)	Cobalt:D (mg/L)	Cobalt:T (mg/L)	Copper:D (mg/L)	Copper:T (mg/L)	Iron:D (mg/L)	Iron:T (mg/L)	Lead:D (mg/L)	Lead:T (mg/L)	Lithium:D (mg/L)	Lithium:T (mg/L)	Magnesium:D (mg/L)	Magnesium:T (mg/L)	Manganese:D (mg/L)	Manganese:T (mg/L)	Mercury:D (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Beryllium:T (mg/L)	Bismuth:D (mg/L)	Bismuth:T (mg/L)	Boron:D (mg/L)	Boron:T (mg/L)	Cadmium:D (mg/L)	Cadmium:T (mg/L)	Calcium:D (mg/L)	Calcium:T (mg/L)	Chromium:D (mg/L)	Chromium:T (mg/L)	Cobalt:D (mg/L)	Cobalt:T (mg/L)	Copper:D (mg/L)	Copper:T (mg/L)	Iron:D (mg/L)	Iron:T (mg/L)	Lead:D (mg/L)	Lead:T (mg/L)	Lithium:D (mg/L)	Lithium:T (mg/L)	Magnesium:D (mg/L)	Magnesium:T (mg/L)	Manganese:D (mg/L)	Manganese:T (mg/L)	Mercury:D (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Beryllium:T (mg/L)	Bismuth:D (mg/L)	Bismuth:T (mg/L)	Boron:D (mg/L)	Boron:T (mg/L)	Cadmium:D (mg/L)	Cadmium:T (mg/L)	Calcium:D (mg/L)	Calcium:T (mg/L)	Chromium:D (mg/L)	Chromium:T (mg/L)	Cobalt:D (mg/L)	Cobalt:T (mg/L)	Copper:D (mg/L)	Copper:T (mg/L)	Iron:D (mg/L)	Iron:T (mg/L)	Lead:D (mg/L)	Lead:T (mg/L)	Lithium:D (mg/L)	Lithium:T (mg/L)	Magnesium:D (mg/L)	Magnesium:T (mg/L)	Manganese:D (mg/L)	Manganese:T (mg/L)	Mercury:D (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		---	---	---	1.5	1.5	0.00007	0.00007	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		---	---	---	1.5	1.5	0.00006	0.00006	---	---	0.05	0.05	---	---	0.0070	0.0070	0.3	0.3	0.001	0.001	---	---	---	---	0.02	0.02	0.000005

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Metals

Monitoring Station	Date (dd-mmm-yyyy)	Mercury:T (mg/L)	Methyl Mercury (mg/L)	Molybdenum:D (mg/L)	Molybdenum:T (mg/L)	Nickel:D (mg/L)	Nickel:T (mg/L)	Phosphorus:D (mg/L)	Phosphorus:T (mg/L)	Potassium:D (mg/L)	Potassium:T (mg/L)	Selenium:D (mg/L)	Selenium:T (mg/L)	Silicon:D (mg/L)	Silicon:T (mg/L)	Silver:D (mg/L)	Silver:T (mg/L)	Sodium:D (mg/L)	Sodium:T (mg/L)	Strontium:D (mg/L)	Strontium:T (mg/L)	Sulphur:D (mg/L)	Sulphur:T (mg/L)	Thallium:D (mg/L)	Thallium:T (mg/L)	Tin:D (mg/L)	Tin:T (mg/L)	Titanium:D (mg/L)	Titanium:T (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	
NODA Seeps GW																													
KHY23_730	18-Mar-2023	0.0000038	---	0.0032	0.0036	0.0090	0.012	< 0.10	< 0.10	2.8	2.9	0.0012	0.0014	6.2	7.5	< 0.00050 #1.4	< 0.00010	51	52	0.39	0.40	21	21	< 0.0010	< 0.00020	< 0.0050	0.0011	< 0.0050	0.040
	12-Apr-2023	< 0.00019 #1.4	---	0.00069	0.0026	0.010	0.061 #1.4	< 0.10	1.1	1.4	6.3	0.00052	0.0011	6.9	53	< 0.00010	0.00029 #1.4	16	18	0.28	0.41	16	18	< 0.00020	< 0.00040	< 0.0010	0.0024	0.0012	0.29
KHY23_731	18-Mar-2023	0.0000046	---	0.0025	0.0027	0.0046	0.0097	< 0.10	0.16	3.3	3.9	< 0.0010	0.00073	6.6	10	< 0.00050 #1.4	< 0.00010	11	11	0.22	0.24	4.4	4.9	< 0.0010	< 0.00020	< 0.0050	0.0016	< 0.0050	0.096
WETA Seeps GW																													
KHY23_745	19-Mar-2023	0.000066 #1.4	---	0.0033	0.0042	0.0027	0.029 #1.4	< 0.10	0.51	1.6	4.8	0.00094	0.0015	4.2	27	< 0.00010	< 0.00020 #1.4	7.2	7.5	0.10	0.15	7.4	8.2	< 0.00020	< 0.00040	< 0.0010	< 0.0020	< 0.0010	0.29
KHY23_746	19-Mar-2023	< 0.0000019	---	0.0045	0.0044	0.0014	0.0013	< 0.10	< 0.10	2.5	2.3	< 0.00020	0.00024	10	11	< 0.00010	< 0.00010	38	37	0.23	0.21	33	31	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.0020
(Duplicate)	19-Mar-2023	< 0.0000019	---	0.0046	0.0048	0.0016	0.0016	< 0.10	< 0.10	2.5	2.5	< 0.00020	0.00032	10	11	< 0.00010	< 0.00010	38	36	0.22	0.20	33	35	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.0021
DP4 Seeps GW																													
KHY23_756	17-Mar-2023	0.0000073 #1.4	---	0.0062	0.0063	< 0.0025	0.010	< 0.10	0.35	5.6	6.6	< 0.0010	0.00070	8.1	19	< 0.00050 #1.4	< 0.00010	92	89	0.59	0.70	57	57	< 0.0010	< 0.00020	< 0.0050	0.0012	< 0.0050	0.17
KHY23_757	17-Mar-2023	< 0.000019 #1.4	---	< 0.0010	0.0011	< 0.0025	0.017	< 0.10	0.54	8.0	9.4	< 0.0010	0.00037	16	28	< 0.00050 #1.4	< 0.00010	7.6	7.6	0.90	1.0	0.68	2.3	< 0.0010	< 0.00020	< 0.0050	< 0.0010	< 0.0050	0.20
KHY23_758	17-Mar-2023	< 0.0000019	---	< 0.0010	0.00062	< 0.0025	0.00076	< 0.10	< 0.10	8.3	8.4	< 0.0010	0.00035	12	14	< 0.00050 #1.4	< 0.00010	24	24	1.3	1.4	2.2	2.1	< 0.0010	< 0.00020	< 0.0050	< 0.0010	< 0.0050	0.012
	16-Apr-2023	< 0.0000019	---	0.00049	0.00055	< 0.00050	0.00060	< 0.10	< 0.10	8.5	7.8	< 0.00020	< 0.00020	11	15	< 0.00010	< 0.00010	27	25	1.4	1.3	0.61	0.76	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.011
KHY23_762	15-Mar-2023	0.00094 #1.4	---	0.048	0.029	0.0033	0.37 #1.4	< 0.10	9.8	3.9	38	0.0039 #1.4	0.011 #1.4	4.5	230	< 0.00010	0.0017 #1.4	190	190	0.20	1.5	74	91	< 0.00020	0.0023	< 0.0010	0.0075	< 0.0010	1.5
Deep Groundwater Off lease																													
KER22_677	05-Mar-2023	< 0.0000019	---	0.0014	0.0015	0.0032	0.0037	< 0.10	< 0.10	5.2	5.0	< 0.00020	0.00023	11	12	< 0.00010	< 0.00010	56	54	0.53	0.49	120	120	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	< 0.0010
KER22_678	18-Mar-2023	< 0.0000019	---	0.0022	0.0023	0.0053	0.0054	< 0.10	< 0.10	5.0	4.9	< 0.00020	0.00024	12	21	< 0.00010	< 0.00010	38	38	0.56	0.56	100	97	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.032
KER22_679	19-Mar-2023	< 0.0000019	---	0.0033	0.0035	0.0041	0.0042	< 0.10	< 0.10	4.6	4.4	0.0017	0.0019	13	14	< 0.00010	< 0.00010	16	16	0.47	0.45	45	44	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.0023
KH09-055	09-Oct-2022	< 0.0000019	---	< 0.00020	0.00043	0.0023	0.0098	0.19	0.21	3.7	3.9	< 0.00020	< 0.00020	9.6	11	< 0.00010	< 0.00010	7.1	7.4	0.24	0.24	82	92	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.0017
KH09-057	12-Sep-2022	---	---	0.00087	---	0.0044	---	< 0.10	---	3.5	---	< 0.00020	---	7.8	---	< 0.00010	---	62	---	0.25	---	110	---	< 0.00020	---	< 0.0010	---	< 0.0010	---
	09-Oct-2022	0.00038 #1.4	---	0.00078	0.0041	0.0040	0.011	< 0.10	0.59	3.7	4.1	< 0.00020	0.00046	7.4	14	< 0.00010	< 0.00020 #1.4	66	64	0.24	0.27	100	110	< 0.00020	< 0.00040	< 0.0010	< 0.0020	< 0.0010	0.079
KHY23_570	11-Mar-2023	0.0000026	---	0.0018	0.0024	0.0065	0.0072	< 0.10	< 0.10	4.8	4.5	< 0.00020	< 0.00020	7.5	11	< 0.00010	< 0.00010	200 #3,6	190	0.34	0.34	200	200	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.0091
(Duplicate)	11-Mar-2023	0.0000041	---	0.0019	0.0021	0.0063	0.0068	< 0.10	< 0.10	4.8	4.7	< 0.00020	0.00023	7.6	11	< 0.00010	< 0.00010	200 #3,6	200 #3,6	0.34	0.35	200	200	< 0.00020	0.00030	< 0.0010	< 0.0010	< 0.0010	0.0079
KHY23_574	12-Mar-2023	< 0.000019 #1,3,4,6	---	0.00080	0.0011	0.0015	0.0087	< 0.10	0.20	4.1	5.1	0.00037	0.00043	15	23	< 0.00010	< 0.00010	20	19	0.44	0.45	58	60	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.11
KHY23_575	12-Mar-2023	< 0.0000019	---	0.0031	0.0035	0.0020	0.0026	< 0.10	< 0.10	4.2	4.1	< 0.00020	< 0.00020	9.6	10	< 0.00010	< 0.00010	9.9	9.7	0.30	0.28	47	45	< 0.00020	< 0.00020	< 0.0010	< 0.0010	< 0.0010	0.012

NOTES:

< X
X

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Metals

Monitoring Station	Date (dd-mmm-yyyy)	Mercury:T (mg/L)	Methyl Mercury (mg/L)	Molybdenum:D (mg/L)	Molybdenum:T (mg/L)	Nickel:D (mg/L)	Nickel:T (mg/L)	Phosphorus:D (mg/L)	Phosphorus:T (mg/L)	Potassium:D (mg/L)	Potassium:T (mg/L)	Selenium:D (mg/L)	Selenium:T (mg/L)	Silicon:D (mg/L)	Silicon:T (mg/L)	Silver:D (mg/L)	Silver:T (mg/L)	Sodium:D (mg/L)	Sodium:T (mg/L)	Strontium:D (mg/L)	Strontium:T (mg/L)	Sulphur:D (mg/L)	Sulphur:T (mg/L)	Thallium:D (mg/L)	Thallium:T (mg/L)	Tin:D (mg/L)	Tin:T (mg/L)	Titanium:D (mg/L)	Titanium:T (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Metals

Monitoring Station	Date (dd-mmm-yyyy)	Mercury:T (mg/L)	Methyl Mercury (mg/L)	Molybdenum:D (mg/L)	Molybdenum:T (mg/L)	Nickel:D (mg/L)	Nickel:T (mg/L)	Phosphorus:D (mg/L)	Phosphorus:T (mg/L)	Potassium:D (mg/L)	Potassium:T (mg/L)	Selenium:D (mg/L)	Selenium:T (mg/L)	Silicon:D (mg/L)	Silicon:T (mg/L)	Silver:D (mg/L)	Silver:T (mg/L)	Sodium:D (mg/L)	Sodium:T (mg/L)	Strontium:D (mg/L)	Strontium:T (mg/L)	Sulphur:D (mg/L)	Sulphur:T (mg/L)	Thallium:D (mg/L)	Thallium:T (mg/L)	Tin:D (mg/L)	Tin:T (mg/L)	Titanium:D (mg/L)	Titanium:T (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Metals

Monitoring Station	Date (dd-mmm-yyyy)	Mercury:T (mg/L)	Methyl Mercury (mg/L)	Molybdenum:D (mg/L)	Molybdenum:T (mg/L)	Nickel:D (mg/L)	Nickel:T (mg/L)	Phosphorus:D (mg/L)	Phosphorus:T (mg/L)	Potassium:D (mg/L)	Potassium:T (mg/L)	Selenium:D (mg/L)	Selenium:T (mg/L)	Silicon:D (mg/L)	Silicon:T (mg/L)	Silver:D (mg/L)	Silver:T (mg/L)	Sodium:D (mg/L)	Sodium:T (mg/L)	Strontium:D (mg/L)	Strontium:T (mg/L)	Sulphur:D (mg/L)	Sulphur:T (mg/L)	Thallium:D (mg/L)	Thallium:T (mg/L)	Tin:D (mg/L)	Tin:T (mg/L)	Titanium:D (mg/L)	Titanium:T (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Metals

Monitoring Station	Date (dd-mmm-yyyy)	Mercury:T (mg/L)	Methyl Mercury (mg/L)	Molybdenum:D (mg/L)	Molybdenum:T (mg/L)	Nickel:D (mg/L)	Nickel:T (mg/L)	Phosphorus:D (mg/L)	Phosphorus:T (mg/L)	Potassium:D (mg/L)	Potassium:T (mg/L)	Selenium:D (mg/L)	Selenium:T (mg/L)	Silicon:D (mg/L)	Silicon:T (mg/L)	Silver:D (mg/L)	Silver:T (mg/L)	Sodium:D (mg/L)	Sodium:T (mg/L)	Strontium:D (mg/L)	Strontium:T (mg/L)	Sulphur:D (mg/L)	Sulphur:T (mg/L)	Thallium:D (mg/L)	Thallium:T (mg/L)	Tin:D (mg/L)	Tin:T (mg/L)	Titanium:D (mg/L)	Titanium:T (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.000005	---	---	---	0.024	0.024	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.000005	---	---	---	0.019	0.019	---	---	---	---	0.002	0.002	---	---	0.0001	0.0001	200	200	---	---	---	---	---	---	---	---	---	---

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)									PAH																
		Uranium:D (mg/L)	Uranium:T (mg/L)	Vanadium:D (mg/L)	Vanadium:T (mg/L)	Zinc:D (mg/L)	Zinc:T (mg/L)	Zirconium:D (mg/L)	Zirconium:T (mg/L)	2-Methylnaphthalene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo[a]anthracene (mg/L)	Benzo[a]pyrene (mg/L)	Benzo[a]pyrene Total Potency Equivalent (mg/L)	Benzo[b]fluoranthene (mg/L)	Benzo[c]phenanthrene (mg/L)	Benzo[e]pyrene (mg/L)	Benzo[g,h,i]perylene (mg/L)	Benzo[k]fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo[a,h]anthracene (mg/L)	Fluoranthene (mg/L)	
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057
NODA Seeps GW																										
KHY23_730	18-Mar-2023	0.0057	0.0067	< 0.0050	0.0035	0.027	0.038 #1,4	---	---	0.0028	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010
	12-Apr-2023	0.0027	0.0076	< 0.0010	0.065	0.0049	0.20 #1,4	---	---	0.0012	< 0.00010	< 0.00010	< 0.000040	< 0.000010	0.000011	0.000022	0.000049 #1,4	0.000040	< 0.000050	0.000063	0.000051	< 0.0000085	0.000021	0.000017	0.000028	
KHY23_731	18-Mar-2023	0.0021	0.0023	< 0.0050	0.010	< 0.015	0.076 #1,4	---	---	< 0.00010	< 0.00010	< 0.00010	0.00012	< 0.000010	0.000031	0.000026	0.000041 #1,4	0.000047	< 0.000050	0.000051	0.000019	< 0.0000085	0.000069	< 0.0000075	0.000028	
WETA Seeps GW																										
KHY23_745	19-Mar-2023	0.0025	0.0034	< 0.0010	0.038	0.0030	0.12 #1,4	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	0.000011	0.000017	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KHY23_746	19-Mar-2023	0.00045	0.00043	< 0.0010	< 0.0010	< 0.0030	< 0.0030	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
(Duplicate)	19-Mar-2023	0.00045	0.00052	< 0.0010	< 0.0010	< 0.0030	< 0.0030	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
DP4 Seeps GW																										
KHY23_756	17-Mar-2023	0.0048	0.0080	< 0.0050	0.011	< 0.015	0.086 #1,4	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KHY23_757	17-Mar-2023	0.00052	0.0014	< 0.0050	0.025	< 0.015	0.12 #1,4	---	---	0.00013	< 0.00010	< 0.00010	< 0.000040	< 0.000010	0.000015	0.000014	0.000023	0.000025	< 0.000050	< 0.000050	0.0000088	< 0.0000085	0.000010	< 0.0000075	< 0.000010	
KHY23_758	17-Mar-2023	0.00098	0.00095	< 0.0050	< 0.0010	< 0.015	< 0.0030	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
	16-Apr-2023	0.00049	0.00069	< 0.0010	< 0.0010	< 0.0030	< 0.0030	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KHY23_762	15-Mar-2023	0.016 #1,4	0.062 #1,4	< 0.0010	0.49	0.0099	1.2 #1,4	---	---	0.00029	0.00037	< 0.00010	0.0018	0.000039 #4	0.00022	0.00020	0.000033 #1,4	0.00034	< 0.000050	0.00036	0.00015	0.000045	0.00051	0.000047	0.000024 #4	
Deep Groundwater Off lease																										
KER22_677	05-Mar-2023	0.00055	0.00057	< 0.0010	< 0.0010	0.0043	0.0049	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KER22_678	18-Mar-2023	0.00096	0.0014	< 0.0010	< 0.0010	0.011	0.0077	---	---	0.00018	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KER22_679	19-Mar-2023	0.0025	0.0027	< 0.0010	< 0.0010	0.010	0.0034	---	---	0.00011	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KH09-055	09-Oct-2022	0.0059	0.0060	0.0011	0.0014	< 0.0030	< 0.0030	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KH09-057	12-Sep-2022	0.0042	---	< 0.0010	---	< 0.0030	---	---	---	---	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
	09-Oct-2022	0.0032	0.0039	< 0.0010	0.018	< 0.0030	0.11 #1,4	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	0.000019	0.000025	< 0.0000085	< 0.000050	< 0.000050	0.000021	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KHY23_570	11-Mar-2023	0.0044	0.0054	< 0.0010	< 0.0010	0.0060	0.0048	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
(Duplicate)	11-Mar-2023	0.0045	0.0046	< 0.0010	< 0.0010	0.0057	0.0039	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	
KHY23_574	12-Mar-2023	0.00040	0.0011	< 0.0010	0.012	0.0080	0.050 #1,3,4,6	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	0.000013	0.000015	0.000023	0.000023	< 0.000050	< 0.000050	0.0000087	< 0.0000085	0.000031	< 0.0000075	0.000013	
KHY23_575	12-Mar-2023	0.0017	0.0022	0.0011	0.0017	0.0061	0.0031	---	---	< 0.00010	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	

NOTES:

< X
X

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	PAH																								
		Uranium:D (mg/L)	Uranium:T (mg/L)	Vanadium:D (mg/L)	Vanadium:T (mg/L)	Zinc:D (mg/L)	Zinc:T (mg/L)	Zirconium:D (mg/L)	Zirconium:T (mg/L)	2-Methylnaphthalene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo[a]anthracene (mg/L)	Benzo[a]pyrene (mg/L)	Benzo[a]pyrene Total Potency Equivalent (mg/L)	Benzo[b&j]fluoranthene (mg/L)	Benzo[c]phenanthrene (mg/L)	Benzo[e]pyrene (mg/L)	Benzo[g,h,i]perylene (mg/L)	Benzo[k]fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo[a,h]anthracene (mg/L)	Fluoranthene (mg/L)	
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.015	0.015	---	---	0.03	0.03	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.015	0.015	---	---	0.03	0.03	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.015	0.015	---	---	0.03	0.03	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.000057
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #6		0.015	0.015	---	---	0.03	0.03	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.000057

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)									PAH																	
		Uranium:D (mg/L)	Uranium:T (mg/L)	Vanadium:D (mg/L)	Vanadium:T (mg/L)	Zinc:D (mg/L)	Zinc:T (mg/L)	Zirconium:D (mg/L)	Zirconium:T (mg/L)	2-Methylnaphthalene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo[a]anthracene (mg/L)	Benzo[a]pyrene (mg/L)	Benzo[a]pyrene Total Potency Equivalent (mg/L)	Benzo[b&j]fluoranthene (mg/L)	Benzo[c]phenanthrene (mg/L)	Benzo[e]pyrene (mg/L)	Benzo[g,h,i]perylene (mg/L)	Benzo[k]fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo[a,h]anthracene (mg/L)	Fluoranthene (mg/L)		
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #6		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057	

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)									PAH																	
		Uranium:D (mg/L)	Uranium:T (mg/L)	Vanadium:D (mg/L)	Vanadium:T (mg/L)	Zinc:D (mg/L)	Zinc:T (mg/L)	Zirconium:D (mg/L)	Zirconium:T (mg/L)	2-Methylnaphthalene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo[a]anthracene (mg/L)	Benzo[a]pyrene (mg/L)	Benzo[a]pyrene Total Potency Equivalent (mg/L)	Benzo[b&j]fluoranthene (mg/L)	Benzo[c]phenanthrene (mg/L)	Benzo[e]pyrene (mg/L)	Benzo[g,h,i]perylene (mg/L)	Benzo[k]fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo[a,h]anthracene (mg/L)	Fluoranthene (mg/L)		
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #6		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057	

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)									PAH																	
		Uranium:D (mg/L)	Uranium:T (mg/L)	Vanadium:D (mg/L)	Vanadium:T (mg/L)	Zinc:D (mg/L)	Zinc:T (mg/L)	Zirconium:D (mg/L)	Zirconium:T (mg/L)	2-Methylnaphthalene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo[a]anthracene (mg/L)	Benzo[a]pyrene (mg/L)	Benzo[a]pyrene Total Potency Equivalent (mg/L)	Benzo[b&j]fluoranthene (mg/L)	Benzo[c]phenanthrene (mg/L)	Benzo[e]pyrene (mg/L)	Benzo[g,h,i]perylene (mg/L)	Benzo[k]fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo[a,h]anthracene (mg/L)	Fluoranthene (mg/L)		
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.015	0.015	---	---	0.03	0.03	---	---	---	0.006	---	---	0.0034	---	0.0018	0.00004	---	---	---	---	---	---	---	---	---	0.24
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057	
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #6		0.015	0.015	---	---	0.03	0.03	---	---	---	0.0058	---	---	0.000012	---	0.0018	0.00004	---	---	---	---	---	---	---	---	0.000057	

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Fluorene (mg/L)	Indeno[1,2,3-cd]pyrene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.0042	---	0.001	---	0.00086	0.71	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.0042	---	0.001	---	0.00086	0.71	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.003	---	0.001	---	0.0004	0.00092	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.003	---	0.001	---	0.0004	0.00092	---
NODA Seeps GW								
KHY23_730	18-Mar-2023	< 0.000050	< 0.000085	0.00022	< 0.000050	< 0.000050	< 0.000020	< 0.00020
	12-Apr-2023	< 0.000050	0.000038	0.00071	0.000092	< 0.000050	0.00012 #4	< 0.00020
KHY23_731	18-Mar-2023	< 0.000050	0.000014	< 0.00010	0.000079	< 0.000050	0.00017 #4	< 0.00020
WETA Seeps GW								
KHY23_745	19-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	0.000089	< 0.00020
KHY23_746	19-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	19-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
DP4 Seeps GW								
KHY23_756	17-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KHY23_757	17-Mar-2023	< 0.000050	< 0.000085	< 0.00010	0.000065	< 0.000050	0.00012 #4	< 0.00020
KHY23_758	17-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
	16-Apr-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KHY23_762	15-Mar-2023	0.00013	0.00010	0.00022	0.00066	0.00034	0.00016 #4	< 0.00020
Deep Groundwater Off lease								
KER22_677	05-Mar-2023	< 0.000050	< 0.000085	0.00012	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KER22_678	18-Mar-2023	< 0.000050	< 0.000085	0.00042	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KER22_679	19-Mar-2023	< 0.000050	< 0.000085	0.00011	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KH09-055	09-Oct-2022	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KH09-057	12-Sep-2022	< 0.000050	< 0.000085	< 0.00010	---	< 0.000050	< 0.000020	---
	09-Oct-2022	< 0.000050	0.000088	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KHY23_570	11-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	11-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
KHY23_574	12-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	0.00011 #4,6	< 0.00020
KHY23_575	12-Mar-2023	< 0.000050	< 0.000085	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020

NOTES:

< X
X

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Fluorene (mg/L)	Indeno[1,2,3-cd]pyrene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.0042	--	0.001	--	0.00086	0.71	--
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.0042	--	0.001	--	0.00086	0.71	--
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.003	--	0.001	--	0.0004	0.000092	--
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.003	--	0.001	--	0.0004	0.000092	--

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Fluorene (mg/L)	Indeno[1,2,3-cd]pyrene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.0042	--	0.001	--	0.00086	0.71	--
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.0042	--	0.001	--	0.00086	0.71	--
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.003	--	0.001	--	0.0004	0.000092	--
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.003	--	0.001	--	0.0004	0.000092	--

Groundwater Analytical Results: All Parameters

PROJECT No.: 417085-47598-23090

Monitoring Station	Date (dd-mmm-yyyy)	Fluorene (mg/L)	Indeno[1,2,3-cd]pyrene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.0042	---	0.001	---	0.00086	0.71	---
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.0042	---	0.001	---	0.00086	0.71	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.003	---	0.001	---	0.0004	0.000092	---
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.003	---	0.001	---	0.0004	0.000092	---

Groundwater Analytical Results: All Parameters

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Monitoring Station	Date (dd-mmm-yyyy)	Fluorene (mg/L)	Indeno[1,2,3-cd]pyrene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - Firebag River #1		0.0042	--	0.001	--	0.00086	0.71	--
2022 AEP Alberta Tier 1 Nat Fine GW Remediation - WB4 #3		0.0042	--	0.001	--	0.00086	0.71	--
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - Firebag River #4		0.003	--	0.001	--	0.0004	0.000092	--
2022 AEP Alberta Tier 1 Nat Coarse GW Remediation - WB4 #5		0.003	--	0.001	--	0.0004	0.000092	--