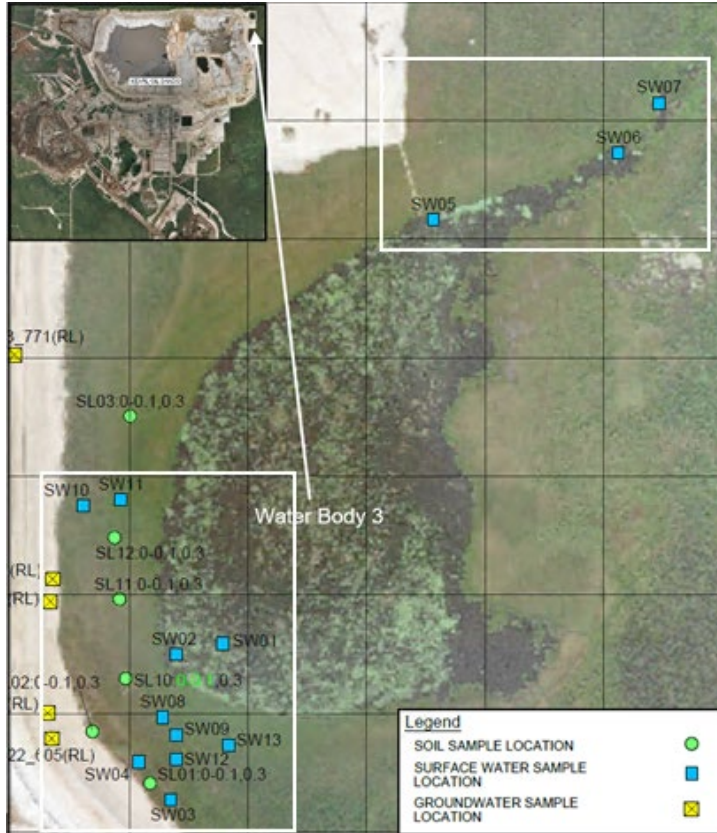


AER Third-Party Sampling 2023

Kearl Oil Sands

Surface Water Quality



Location	Date	PAL Guideline Exceedance*
Receptor (Water Body 3)		
SW01 (receptor-near seep)	28-June-2023	PAL: total sulphide
SW02 (receptor-near seep)	28-June-2023	PAL: no exceedances
SW05 (receptor-near outlet)	28-June-2023	PAL: no exceedances
SW06 (receptor-outlet)	28-June-2023	PAL no exceedances
SW07 (receptor-near outlet)	28-June-2023	PAL: total chromium, total silver
Source		
SW03 (source- seep)	28-June-2023	PAL: F2, total chromium, dissolved iron No guideline: naphthenic acids (0.83 mg/L)
SW04 (source- seep)	28-June-2023	PAL: F2, total arsenic, total cobalt, dissolved iron, sulphate, ammonia No guideline: naphthenic acids (1.39 mg/L)
SW08 (source- onshore)	28-June-2023	PAL: F2, toluene, total cobalt, dissolved iron No guideline: naphthenic acids (2.4 mg/L)
SW11 (source- onshore)	28-June-2023	PAL: no exceedances
SW13 (source- onshore)	28-June-2023	PAL: F2, toluene, dissolved iron

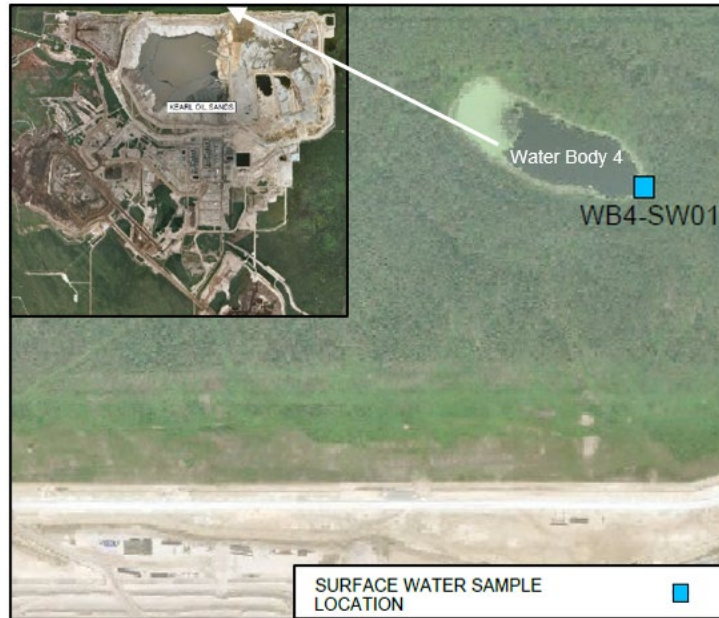
* Environmental Quality Guidelines for Alberta Surface Waters, Surface Water Quality Guidelines for the Protection of Aquatic Life.

Interpretation

- Several metals and major ions exceed guidelines in the area prior to Kearl mine development, based on 2003-2004 baseline sampling. This includes iron, sulphide, zinc
- Naphthenic acids were analyzed using the FTIR method. Naphthenic acids sampled on June 28, 2023 analyzed using the Orbitrap method is not available for this update.
- Total and dissolved sulphide samples were analyzed by a different lab. Therefore, June 28, 2023 data is not available for this update.

AER Third-Party Sampling 2023

Kearl Oil Sands



Surface Water Quality

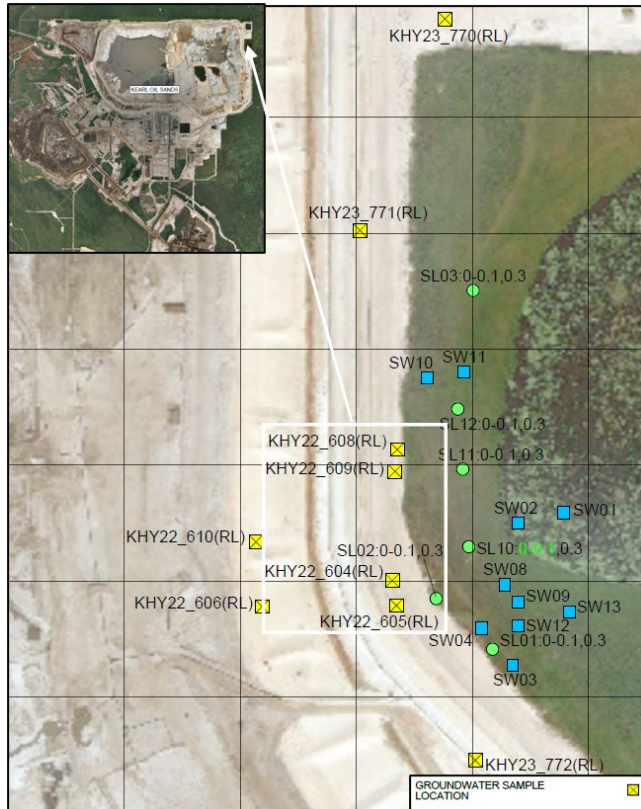
Location	Date	PAL Guideline Exceedance*
Water Body 4		
WB4-SW01	28-June-2023	PAL: no exceedances

*Environmental Quality Guidelines for Alberta Surface Waters, Surface Water Quality Guidelines for the Protection of Aquatic Life

Interpretation

- Naphthenic acids sampled on June 28, 2023 analyzed using the Orbitrap method is not available for this update.
- Total and dissolved sulphide samples were analyzed by a different lab. Therefore, June 28, 2023 data is not available for this update.

AER Third-Party Sampling 2023



Groundwater

Location	Date	AB Tier 1 Guideline Exceedance*
KHY22-604 (shallow well)	28-June-2023	AB Tier 1: TDS, sulphate, manganese, iron No guideline: naphthenic acids (29.2 mg/L)
KHY22-605 (deep well)	28-June-2023	AB Tier 1: pH, TDS, iron, copper No guideline: F1 (0.3 mg/L)
KHY22_609 (deep well)	28-June-2023	AB Tier 1: manganese, iron
KHY23-772 (Shallow well)	28-June-2023	AB Tier 1: ammonia, TDS, sulphate, sodium, iron, manganese, F2, arsenic, boron No guideline: naphthenic acids (34.2 mg/L)

* Alberta Tier 1 Soil and Groundwater Remediation Guidelines

Interpretation

- Exceedances suggest the presence of tailings seepage in shallow groundwater.
- Results from KHY22-605 appear anomalous and are undergoing confirmation.
- KHY22-609 does not show impacts from tailings seepage in deeper groundwater.

Soils

Last sampled on April 22, 2023. Refer to previous update.