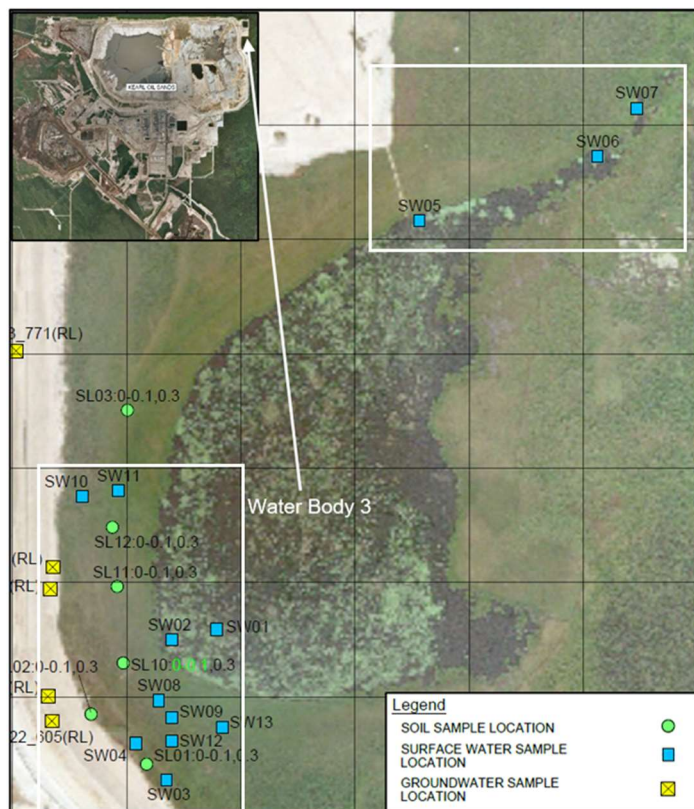


AER Third-Party Sampling 2023

Kearl Oil Sands

Surface Water Quality



Location	Date	PAL Guideline Exceedance*
Receptor (Water Body 3)		
SW01 (receptor-near seep)	11-May-2023	PAL: total sulphide
SW02 (receptor-near seep)	11-May-2023	PAL: total sulphide
SW05 (receptor-near outlet)	11-May-2023	PAL: total sulphide
SW06 (receptor-outlet)	11-May-2023	PAL: total sulphide
SW07 (receptor-near outlet)	11-May-2023	PAL: total sulphide
Source		
SW03 (source- seep)	11-May-2023	PAL: F2, total arsenic, total cadmium, total chromium, total cobalt, total lead, total nickel, total zinc, dissolved iron, total sulphide No guideline: naphthenic acids (2.1 mg/L)
SW04 (source- seep)	11-May-2023	PAL: total sulphide
SW08 (source- onshore)	11-May-2023	PAL: F2, total lead, total sulphide No guideline: naphthenic acids (3.8 mg/L)
SW11 (source- onshore)	11-May-2023	PAL: total sulphide
SW13 (source- onshore)	11-May-2023	PAL: total chromium, total copper, total lead, dissolved iron, total sulphide No guideline: naphthenic acids (0.8 mg/L)

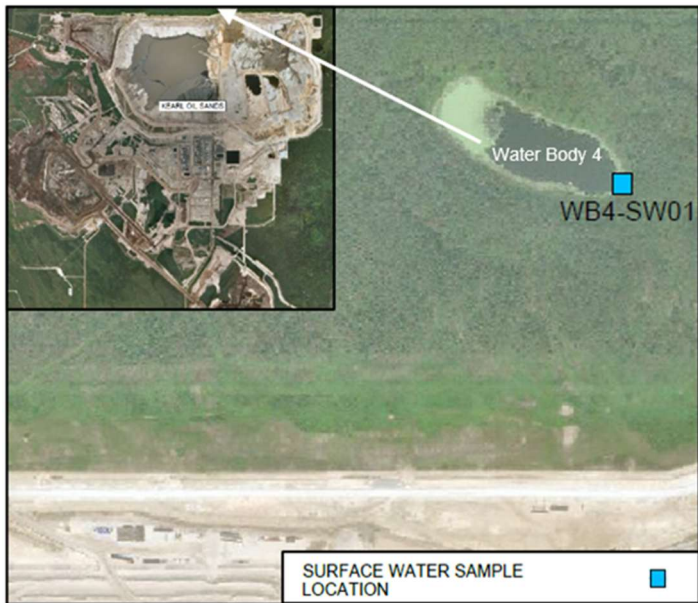
* Environmental Quality Guidelines for Alberta Surface Waters, Surface Water Quality Guidelines for the Protection of Aquatic Life.

Interpretation

- Sulphide results from May 4 and May 11, 2023 were analyzed by a different lab for increased detection. Sulphide exceeded guidelines at all locations on May 4 and May 11, 2023. Sulphide can be an indicator of groundwater influence. Historical exceedance of sulphide in Waterbody 3 prior to Kearl mine development suggests it may be hydraulically connected to groundwater.
- 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.

AER Third-Party Sampling 2023

Kearl Oil Sands



Surface Water Quality

Location	Date	PAL Guideline Exceedance*
Water Body 4		
WB4-SW01	11-May-2023	PAL: toluene, total lead, total sulphide

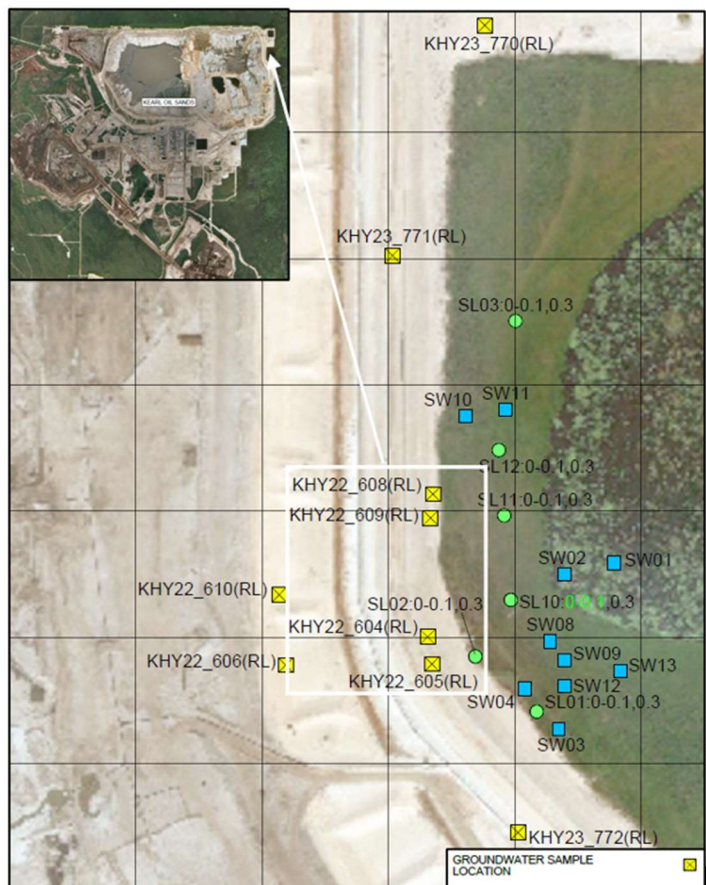
*Environmental Quality Guidelines for Alberta Surface Waters, Surface Water Quality Guidelines for the Protection of Aquatic Life

Interpretation

- Toluene may be biogenic (natural) in origin and is common in wetlands.
- Sulphide results from May 4 and May 11, 2023 were analyzed by a different lab for increased detection. Sulphide can be an indicator of groundwater influence.

AER Third-Party Sampling 2023

Kearl Oil Sands



Soils

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

Groundwater

Last sampled on May 4, 2023. Refer to previous update.