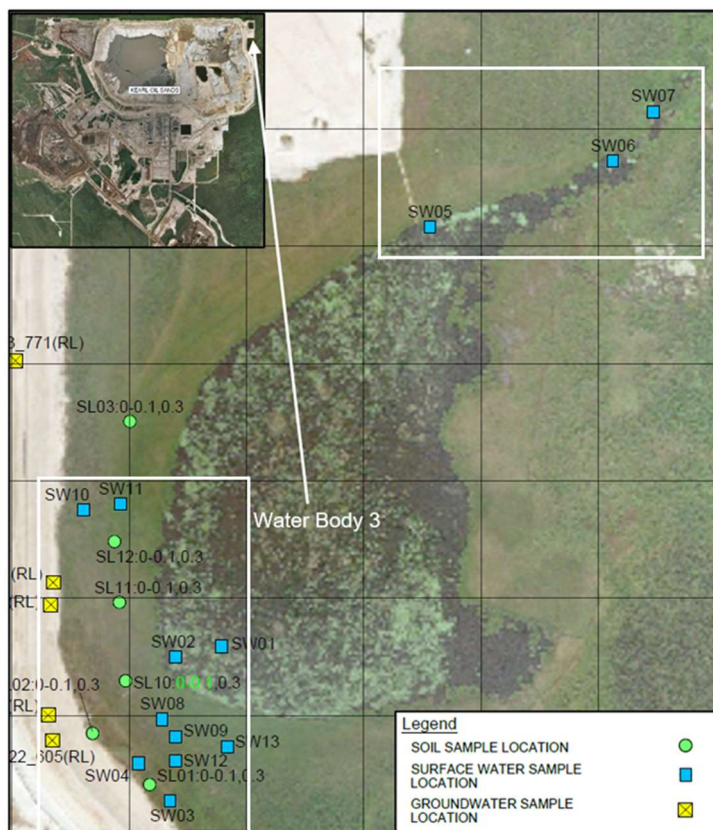


# AER Third-Party Sampling 2023

## Kearl Oil Sands

## Surface Water Quality



Location	Date	PAL Guideline Exceedance*
Receptor (Water Body 3)		
SW01 (receptor-near seep)	04-May-2023	PAL: No exceedances
SW02 (receptor-near seep)	04-May-2023	PAL: No exceedances
SW05 (receptor-near outlet)	04-May-2023	PAL: No exceedances No guideline: naphthenic acids (0.3 mg/L)
SW06 (receptor-outlet)	04-May-2023	PAL: No exceedances
SW07 (receptor-outlet)	04-May-2023	PAL: No exceedances
Source		
SW03 (source- seep)	04-May-2023	PAL: F2, total zinc No guideline: naphthenic acids (1.5 mg/L)
SW04 (source- seep)	04-May-2023	PAL: No exceedances
SW08 (source- onshore)	04-May-2023	PAL: No exceedances No guideline: naphthenic acids (0.5 mg/L)
SW11 (source- onshore)	04-May-2023	PAL: No exceedances
SW13 (source- onshore)	04-May-2023	PAL: dissolved iron No guideline: naphthenic acids (0.4 mg/L)

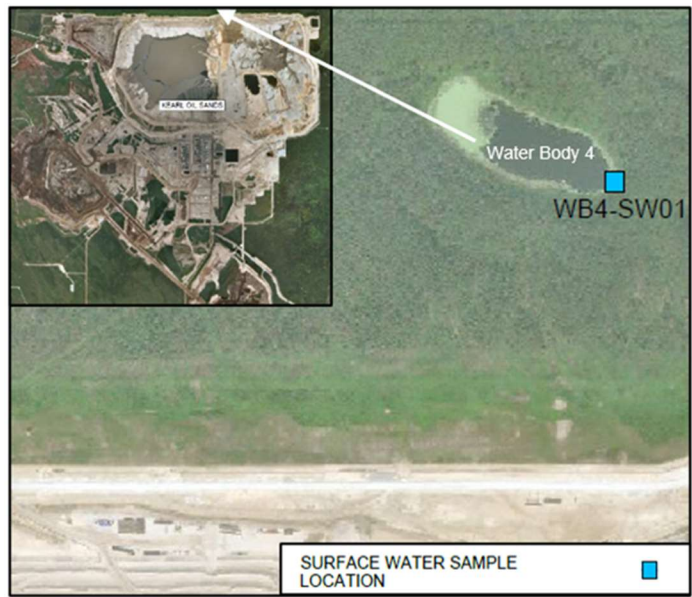
\* Environmental Quality Guidelines for Alberta Surface Waters, Surface Water Quality Guidelines for the Protection of Aquatic Life.

## Interpretation

- Naphthenic acids were only present at location SW05 May 4, 2023 for locations within Waterbody 3.
- Sulphide results from May 4, 2023 were not available at time of publication. Sulphide collected on April 21 and April 27, 2023 were analyzed by a different lab for increased detection. Sulphide exceeded guidelines at all locations on April 21 and April 27, 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	04-May-2023	PAL: total cobalt

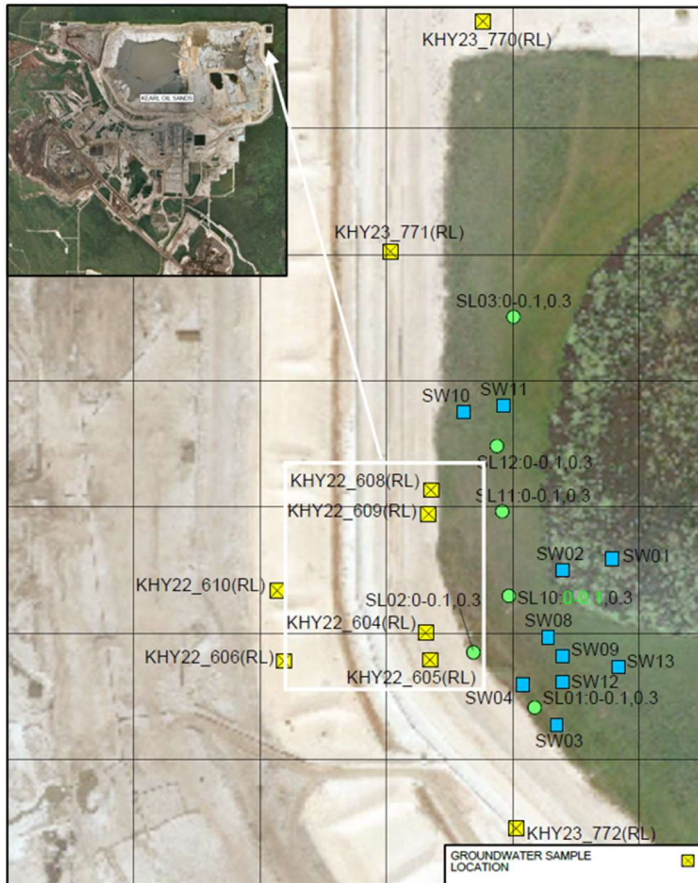
\*Environmental Quality Guidelines for Alberta Surface Waters, Surface Water Quality Guidelines for the Protection of Aquatic Life

## Interpretation

- Cobalt was below detection limit, but lab detection limit for cobalt was greater than guideline. As a result, it is unknown if cobalt exceeded guideline but is included as an exceedance as a precaution.

# 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.