



## Process Guide for Approaching Salt Contamination

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In 2023, Matrix developed a draft Process Guide for Approaching Salt Impacted Sites for Petroleum Technology Alliance Canada (PTAC) under the Alberta Upstream Petroleum Research Fund (AUPRF). The guide focused on describing the current accepted regulatory process for approaching, managing, and assessing salinity-impacted sites for the upstream petroleum industry. Two priority data gaps were identified through the development and application of the Guide; Evaluation of Risk to Groundwater and Addressing Root Zone Impacts via a Detailed Site Assessment. In 2024, Matrix has prepared draft guidance documents to support practitioners with these two priority data gaps and is engaging with Alberta Environment and Protected Areas (EPA) and the Alberta Energy Regulator (AER) to seek regulatory endorsement.

The draft Evaluation of Risk to Groundwater guidance document was developed with the intent to support practitioners in identifying instances where there is clearly no risk and instances when further intrusive assessment is required. The evaluation is based on the magnitude and extent of salinity impacts relative to proximity of receptors. The guidance document provides numerical thresholds that can be used as screening to determine whether additional assessment is required.

The draft Process Guide for assessing impacts of salts on vegetation provides a process for assessing the risk posed by salts to the ecological soil contact pathway, focusing on vegetation as a receptor. The guidance document largely leverages existing policy documents with the intent of expanding their applicability.

### Sheila Luther

Ms. Luther has over 20 years of experience with environmental assessment and research projects with a focus on soil reclamation, contamination assessment, and remediation. Her work experience includes contaminated soils assessment and remediation, pre-construction and post-reclamation assessments for oil and gas industry sites, environmental monitoring, literature reviews, technology transfer, and research on soil and water contaminant interactions. Her current roles include Technical Lead for Reclamation and project technical accountable for multiple projects, most with a closure objective.

### Ashley Morgan

Ms. Morgan is a hydrogeologist and Professional Geoscientist in Alberta and Saskatchewan with Matrix Solutions, based in Calgary, AB. Ms. Morgan manages and provides technical assistance to complex sites within Western Canada. She has over 12 years of experience with a focus in contaminant hydrogeology. She has extensive field and officebased experience, with an emphasis on assessment and remediation of impacted soils and groundwater. Ms. Morgan has provided technical support or managed sites ranging in complexity and size from wellsite with shallow localized impacts to domestic use aquifer impacted sites spanning multiple LSDs. She has managed remediation programs based on Tier 1 or 2 guidelines, Subsoil Salinity Tool, and risk-based approaches including site-specific risk assessments within Alberta and Saskatchewan.