

Site-Specific Risk Assessment as a Cost-Effective step in achieving Regulatory Closure at a Former Gas Plant in Northern Alberta

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Since 2017, ATCO Energy Solutions has been progressing the decommissioned of the Cranberry sweet gas processing plant towards site remediation and reclamation in order to achieve regulatory closure. The site is located on Crown land in northwestern Alberta. During remediation in 2020, an additional contaminated area (drilling waste disposal area) not encountered during the Phase II environmental site assessments (ESAs) and site conditions not aligned with the conceptual site model and remedial action plan were encountered. Concurrent with active remediation works, a site-specific risk assessment (SSRA) was completed to address the new contaminated area and re-evaluate the exposure pathways such that revised site-specific remediation objectives (SSROs) could be developed for soil and groundwater parameters. Using a combination of methods including fate and transport modelling, consideration of a hydrogeologic confining unit and stochastic assessment, the SSRA eliminated some exposure pathways. This removed remediation requirements for some metals and reduced the volume of petroleum hydrocarbon and glycol-impacted soils needing remediation. The approach within the SSRA was accepted by the Regulator, allowing site remediation to be completed and progress towards reclamation to be achieved.

The relative remoteness of the site affected logistics and associated economics. The use of SSRA assisted in a successful, safely executed project. The presentation will provide an overview of some key risk assessment results and associated regulatory approach to best allow for remediation cost efficiencies.

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Tim Kulka

Tim Kulka is a Senior Advisor with ATCO Energy Solutions since 1998. He has over 23 years of experience managing the environmental liabilities for upstream facilities. Tim is a graduate of Environmental Sciences at NAIT. He has been the ATCO project manager during the demolition, assessment and remediation work at the former Cranberry Gas Plant.

Tiona Todoruk

Tiona Todoruk is the Technical Director for Risk Assessment with Advisian. She has more than 20 years of experience in the environmental industry. Her expertise encompasses contaminated sites investigations and numerous aspects of human health and ecological risk assessment. Dr. Todoruk was the senior reviewer for the SSRA at the Cranberry Gas Plant.

Masten Brolsma

Masten Brolsma is a Specialist Environmental Engineer with Advisian since 2012. He has over 30 years of experience working in environmental consulting and industry. Masten holds a degree in Environmental Engineering from Montana Tech. He has been the Advisian project manager during the remediation work at the former Cranberry Gas Plant.