Collaboration for Closure of Salt Affected Well Sites in Saskatchewan Using Tier 2 Pathway Modification

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Historically, the industry accepted practice is that elevated salinity within the soil profile would require further remedial action based upon exceedances of generic Directive PNG033: Phase II Environmental Site Assessment (PNG033) and the Saskatchewan Environmental Quality Standards (SEQS). The interpretation of the generic salinity criteria may indicate the potential for an adverse effect when at many sites there may be no such potential.

Currently, the Saskatchewan Ministry of Environment and Resources (MER) is updating the process for the evaluation of salt affected well sites in Saskatchewan. This draft directive provides guidance on an environmentally responsible path to obtain an Acknowledgement of Reclamation (AOR) and remove potential liability for oil and gas sites that may have salinity concentrations exceeding generic PNG033 and the SEQS. These risk-based approaches manage salinity using site specific criteria and ecological risk assessment methods. In collaboration with MER, MEMS has utilized this new approach, which applies sound technical analysis of site conditions and the options available under the updated regulatory framework, coupled with risk-based decision-making philosophy to reduce total environmental liability.

The application of this new draft directive for salt-affected well sites has resulted in a decrease in net environmental liability associated with upstream oil and gas well sites. The application of this approach has reduced the need for intrusive site remediation, thus minimizing additional site disturbance, reducing net remediation/reclamation costs and accelerating reclamation timelines and site closure.

The focus of this presentation is to provide a general overview of the draft directive for the evaluation of salinity impacted soils in Saskatchewan. This presentation will also highlight how collaboration between the MER and industry has led to successful application of this draft directive including Tier 2 Pathway Modification. The presentation will help identify sites where existing concentrations of salts in place in soil will not result in adverse effects on any valued receptor and will provide an alternate route for regulatory closure. Examples will be presented that outline the approach and procedures used. The presentation will also explain the information required to make the management decision to proceed under this new approach to ensure project success and indicate potential problems to avoid. Case studies of completed projects employing Tier 2 Pathway Modification will be discussed and the liability reduction achieved from this new process will be summarized.

Jonas Fenn

Prior to Jonas becoming a public servant he worked private sector. Jonas career was mainly within the energy sector throughout Saskatchewan, Manitoba and Alberta. Jonas concentrated on energy sector related contamination in the form of initial spill response and remediation of historically contaminated sites, specializing on sites that did not have obvious remediation goals and required additional analysis and thought process. Given Jonas unorthodox approach to contaminant remediation and general dislike of generic guidelines and criteria he adds an interesting point of view for contaminant remediation which focuses on Saskatchewan made solutions through a solid scientific approach.

Trevor Burgers

Trevor has worked with Millennium EMS Solutions Ltd. since 2005, upon his graduation from the University of Alberta with an M.Sc in Land Reclamation and Remediation. He is an Environmental Scientist with industry leading expertise in the assessment and remediation of upstream oil and gas sites in western Canada and industrial settings. His work experience and training includes project management, site reclamation, environmental risk assessment and risk management, contamination remediation, due diligence for asset acquisition and divestment and managing and conducting hundreds of Phase 1 / Stage 1 and Phase 2 Environmental Site Assessment's and remediation projects for several industrial and oil and gas clients. Since 2013, he has been a Technical Lead for the Assessment and Remediation team within Millennium EMS Solutions Ltd.