James Brydie Ph.D., P.Geo

James Brydie is an environmental scientist and Director with CanmetENERGY Devon (Natural Resources Canada), leading a team of research scientists and engineers to address environmental issues related to natural resource development.

Dr. Brydie has over 30 years of experience in academia, the nuclear industry, Alberta Provincial and Canadian federal government research roles related to characterizing, monitoring and remediating contaminants in the natural environment; including gases, liquid petroleum products, trace metals and radionuclides. He has developed and used physical and numerical models to simulate and remediate contaminant migration in surface and groundwater ecosystems from bench- to field-scale. Examples include the detection and migration of oil and diluted bitumen leakage from pipelines, ship-sourced oil spill studies, Hazardous and Noxious Substances (HNS), the remediation of CO_2 leakage in the subsurface from pilot and commercial-scale Carbon Capture Utilization and Storage (CCUS) sites in Alberta.

With respect to environmental research, Dr. Brydie's multi-disciplinary research team focuses upon bench- to pilot-scale studies where environmental impacts related to natural resource development are simulated. Specific examples include Arctic marine oil spills, deep water blowouts, transmission pipeline leakage to groundwater and the fate, behaviour and remediation of selected HNS (including microplastics). These research studies result in new methods, improved technologies, and technical support for industry, technology developers and policy makers.