



Tuesday, April 29, 2008
Stream B – Remediation Management

Topic Keynote

LOCATION: GRAND BALLROOM B

8:45 am - 9:30 am



Dirk van Zyl,
University of British Columbia

Dirk van Zyl is Professor of Mine Life Cycle Systems at the Norman B. Keevil Institute of Mining Engineering, University of British Columbia, Vancouver, BC. Dirk has more than 30 years experience in research, teaching and consulting in tailings and mine waste rock disposal and heap leach design. Lately much of his attention has been focused on mining and sustainable development.

Dirk received a B.Sc. in Civil Engineering in 1972 and a B.Sc. (Honors) in 1974, both from the University of Pretoria, South Africa. He also received a M.S. and Ph.D. in Geotechnical Engineering from Purdue University in 1976 and 1979, respectively. In 1998 he completed an Executive MBA at the University of Colorado. He is a registered professional engineer in three States in the U.S.

Dirk has consulted internationally on many mining projects. These projects covered the whole mining life cycle, from exploration to closure and post-closure, in a large range of climatic and geographic environments. Most of this work has been focused on geotechnical and environmental mining engineering aspects to provide solutions for environmental and human health protection. He previously taught at The University of Arizona and Colorado State University.

Dirk has more than 80 publications to his credit; these include papers and book chapters. He has also presented numerous short courses on heap leach design, mining environmental management and mine closure in the U.S. and abroad. He is the recipient of the three awards from the Society for Mining, Metallurgy and Exploration (SME). These are the Robert Peele Award (1985) and Distinguished Service Award (1992) from the Mining and Exploration Division, and a President's Citation (1998). Dirk became a Distinguished Member of SME in 2003. He received the Bureau of Land Management Sustainable Development award in 2005 and the Adrian Smith International Environmental Mining Award in 2006.

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9:30 am - 10:20 am

Accounting and Reporting on Environmental Liabilities Related to Contaminated Sites and Solid Waste Landfills

Marianna Gee, CA, Financial Management and Analysis Sector,
Treasury Board of Canada, Secretariat

The session will discuss the Canadian Generally Accepted Accounting Principles for the Public Sector; the Treasury Board Policy on Accounting for Costs and Liabilities related to Contaminated Sites; and Policy on Management of Real Property in relation to the management of the contaminated sites and solid waste landfills. It will include an update on the relevant Treasury Board policies and guidance under the Policy Suite Renewal Initiative.

10:50 am - 11:15 am

Colomac Remediation Plan Development: Involving Traditional Knowledge of the Tlicho Elders

George J. Lafferty, Indian and Northern Affairs Canada

To ensure remediation project success, industry and government need to involve the people most affected by these projects in the development of remediation plans.

The remediation of mines, both operating and abandoned, has become an important issue for northern Aboriginal people. They must be involved in decisions that consider legal, regulatory and policy requirements, scientific and technical standards and practices, as well as traditional knowledge and cultural values.

A case study will be presented to highlight the involvement of Tlicho Elders with Indian and Northern Affairs Canada (INAC) in the development of the Colomac Mine remediation plan, including the collaborative mine options selections process. Although the process encountered many challenges, it provided the Chief Executive of the Tlicho Government with the opportunity to use its values and priorities to systematically assess project risks and to ultimately select a preferred option for the closure of Colomac.

The mine closure plan, resulting from the process, met the needs of both partners. During the public consultation process, the plan received positive feedback and there was minimal concern raised, thereby avoiding a potentially lengthy and costly environmental assessment process.

This case study will include: introduction of the issue; description of the remediation plan process and decision-making process; highlights of the challenges and benefits for each partner; and, highlights of the benefits of aboriginal involvement during pre-construction and progressive remediation stages.

11:15 am - 11:40 am

Using Integrated Risk Management to Support Adaptive Management of a Large Scale Contaminated Sites Program

John Lark¹, Claudia David²

¹Stratos Inc.

²Indian and Northern Affairs Canada

This presentation will outline the steps required to implement integrated risk management as a tool to support adaptive management. The case study that will be the basis for this presentation is the contaminated sites program within the Department of Indian Affairs and Northern Development, which assess and remediates contaminated sites in Canada's North. Integrated risk management informs priority settings and decision making in this large-scale program, which has a wide range in site characteristics, from extremely large and complex, to small and straightforward. The presentation will outline how site-specific risk assessments inform strategic level integrated risk management and include a demonstration of how integrated risk management supports adaptive management when conditions change and priorities are realigned.

11:40 am - 12:05 pm

Stakeholder Collaboration for Effective Project Management in an Arctic National Park: Stokes Point BAR-B DEW Line – From Assessment to Remediation

John Snell¹, Edward McLean¹, Dr. Ken Reimer²,

Nick Batty²

¹Parks Canada

²Royal Military College of Canada

Stokes Point/BAR-B is a former intermediate distant early warning (DEW) Line site and the current site of a Department of National Defence (DND) short-range radar installation operating within Ivvavik National Park of Canada. Ivvavik is the first National Park created from a modern aboriginal land claim agreement (*The Inuvialuit Final Agreement*,

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1984). The park was established for the benefit of all Canadians and is co-managed by the Inuvialuit and the Parks Canada Agency (PCA), with the intention of ensuring the long term integrity of wilderness, health of wildlife populations and to ensure the Inuvialuit can continue to practice traditional lifestyles. As part of this management effort, PCA has initiated a project to comprehensively assess Stokes Point/BAR-B for chemical impacts from past uses and to remediate where necessary. Recognizing the interests, rights and knowledge of various parties at Stokes Point/BAR-B, a stakeholder steering committee has been established as the principal advisory body for this project. Members include the Aklavik Community Corporation, Aklavik Hunters and Trappers Committee, Wildlife Management Advisory Council – North Slope, Inuvialuit Regional Corporation, DND, PCA and the scientific lead represented by Environmental Sciences Group, Royal Military College of Canada. This presentation will describe the collaborative approach with particular emphasis on public involvement and its impact on the effort to achieve project outcomes that respect the knowledge, rights and further the interests of the various parties.

1:30 pm - 1:55 pm

Achieving Social and Economic Benefits for Aboriginal and Northern Peoples, Businesses and Communities on Contaminated Sites Remediation Projects: Best Practices, Lessons Learned and Outcomes from the Implementation of the Northern Contaminated Sites Program Procurement Strategy 2004 to PresentJoanna Ankersmit¹, Octavio Melo¹, David Wasiuta², David Swift³, Cathryn Kallwitz³¹Indian and Northern Affairs Canada²Public Works and Government Services Canada³RFP Solutions

Contaminated sites project managers and contracting staff strive to achieve a balance between competing requirements for legislative compliance, fiscal responsibility, and the achievement of meaningful outcomes for those communities and peoples most affected by remediation projects. Under the Federal Contaminated Sites Action Plan (FCSAP), Indian and Northern Affairs Canada (INAC)'s Northern Contaminated Sites Program (NCSP), in collaboration with Public Works and Government Services Canada (PWGSC), is restoring numerous contaminated sites in the North. The fulfillment of NCSP's mandate requires compliance with multiple and complex comprehensive land claims agreements and the federal contracting framework.

NCSP has developed and implemented a Pan-Northern strategy for project procurement aimed at achieving sustainable environmental outcomes in a manner that effectively balances the optimization of industrial, regional, and Aboriginal economic development opportunities with the achievement of best value; maintaining compliance with numerous competing legislative, policy and operational requirements.

While each contaminated site, and its related procurement activity, is as unique as the physical, cultural, and regulatory environment in which it takes place, to date, the NCSP procurement strategy has been successfully implemented within twenty contracts in the order of \$150 million of remediation work across the North. The strategy has effectively and consistently realized outcomes for the program, suppliers, and communities through the maximization of local and Aboriginal participation in opportunities for employment, prime and sub-contracting, training, apprenticeship programs and other related measures, adapted to the conditions of each project.

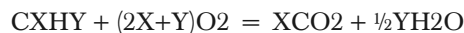
1:55 pm - 2:20 pm

Sustainability in Remediation: Analysis in Petroleum Hydrocarbon Remediation

Leslie Reid, M.Eng., P.Eng., Jacques Whitford AXYS

Many remediation techniques are used in this industry, though no parameters exist which dictate procedures in line with sustainability goals. This presentation will evaluate the direct and indirect environmental impacts of remediation techniques. Remediation methods to be analyzed include in-situ remediation, ex-situ remediation, and risk assessment. External environmental impacts will include additional carbon emissions which may be associated with the method of remediation applied.

Many methods of remediation of petroleum hydrocarbons result in the degradation of the hydrocarbon alone.



An analysis will look at the rate of carbon emissions, the location of remediation (concrete treatment pad, in-situ) and its effects on the environment. In addition, an analysis will be made on the carbon dioxide generated during the remediation activities (i.e., trucks hauling away contaminated and clean fill, shipping of ORC, shipping a HDPE liner to the site to validate the risk assessment). An analysis of remediation methods eligible for LEED® credits during a development or redevelopment project will be given. Final conclusions will be presented in a decision matrix.

All presentations will be delivered in English, unless noted otherwise.

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2:20 pm - 2:45 pm

Remediation at a Former Canadian Forces Base in Chatham, New BrunswickDaniel Godbout¹, Michel Pouliot², Guy Lavoie², Yvan Pouliot²¹Department of National Defence²Biogénie S.R.D.C. Inc.

In November 1998, the Department of National Defence (DND) awarded a contract to Biogénie Inc. to remediate petroleum-impacted soil and groundwater at the Fire Fighting Training Area (Sub-Site 18), located on the former Canadian Forces Base in Chatham, New Brunswick. The contract was managed by Defence Construction Canada (DCC) and executed over a period of three years.

In order to fulfill its contractual arrangement with the Province of New Brunswick, DND had to complete the remediation of the Chatham Base according to the provincial guidelines of the day. Many challenges had to be overcome in order to achieve the client overall objectives. Because of the nature of the site historical activities, petroleum hydrocarbon contamination was found in various sections of the site. In order to achieve economies of scale, Biogénie offered to design, construct and operate a soil management facility on-site. This approach was proven efficient, not only in terms of treatment technology application, but also enabled DND and DCC to manage seven other sub-sites located on the Chatham Base. All these sub-sites were managed within the time frame required by the Province of New Brunswick, and allowed for DND to surpass the overall anticipated clean-up requirements.

A total volume of 104,243 metric tons of impacted soil was excavated, transported, segregated, treated, and successfully re-used on site. In order to overcome the risk involved with the treatment technology application, DND and DCC elected to work on a pay-for-performance contract with Biogénie.

This presentation will provide an overview of the challenges DND, DCC and Biogénie faced during the execution of this accomplishment.

3:15 pm - 3:40 pm

Guidance and Orientation for the Selection of Technologies (GOST) for the Rehabilitation of Contaminated Sites

Sébastien Yelle, Public Works and Government Services Canada

Public Works and Government Services Canada (PWGSC), the National Research Council's Biological Research Institute (NRC-BRI) and the Montreal Centre of Excellence in Brownfields Rehabilitation (MCEBR) have produced a website tool for the selection of rehabilitation technologies for contaminated sites. This site was created in order to help project managers, in their efforts to restore sites that present potential risks to human health and the environment, to use treatment technologies. A questionnaire helps the project manager to narrow the list of technologies applicable on a specific site, with specific issues related to geology, hydrogeology and contaminants. This site provides a list of over 80 technologies fully described on a data sheet. The data sheet includes the advantages of using the technology, the limitations or barriers of using the technology, other technologies that enhance its performance or its treatment results, specific tests that should be performed during a Phase III site assessment and website links for more information. This site also addresses the innovative technologies that are proven or are in the demonstration stage.

3:40 pm - 4:40 pm

Panel Discussion – Live and Unplugged