

CONTAMINATED SITES MANAGEMENT AND REGULATION IN BRITISH COLUMBIA AS IT AFFECTS MINE SITES

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ABSTRACT

Contaminated sites legislation (*Waste Management Amendment Act, 1993*) was passed by the British Columbia Legislature on June 15, 1993, but its proclamation awaits completion and approval of the regulation. The legislation is directed at historical contamination. It provides a regulatory framework for managing contaminated sites, and spells out responsibility for remediation in accordance with the "polluter pay" principle. Exemptions to liability as required for greater fairness are included. The contaminated sites regulation now in preparation provides technical and procedural details as well as further guidelines regarding liability. Standards which define contaminated sites and satisfactory remediation will be included in the regulation. This paper reviews the legislation and regulation, provides a status update, and highlights provisions applicable to mine sites.

BACKGROUND

Successful operation of any industry today involves ensuring protection of the environment. Terms such as "environmental stewardship" and "responsible care" have become part of the language of industry. They appear frequently in company environmental policies and statements of commitment. At the same time, governments are being called upon to clarify and develop regulatory requirements and standards. In British Columbia, environmental protection legislation is being revised and developed. Through balanced regulatory requirements and corporate environmental policies and programs, environmental quality protection and enhancement can be achieved.

Contaminated Sites Legislation

After several years of development, contaminated sites legislation was introduced and passed in the British Columbia legislature in 1993. The *Waste Management Amendment Act, 1993* (Bill 26) was passed on June 15, 1993 but is not yet in effect. The *Contaminated Sites Regulation* must be completed first. Drafting is nearing completion and consultation and review continues. Revisions are being made based

on consultation with a large number and variety of affected and interested parties. Technical and administrative detail required to implement the legislation is included in the Regulation.

British Columbia is not alone in Canada in bringing forward legislation dealing with contaminated sites. Alberta passed its *Environmental Conservation and Protection Act* in 1992, with provisions for contaminated sites. Manitoba, Saskatchewan, Ontario and New Brunswick are all at various stages of legislative review and revision. Quebec had made some revisions earlier. Other provinces are considering their needs as well. These efforts including British Columbia's, are a result of conditions within each province, but also a response to initiatives under the Canadian Council of Ministers of Environment (CCME) to develop and implement "polluter pay" legislation across Canada. In early May 1993 prior to introduction of British Columbia's legislation, CCME ministers approved a series of principles recommended in a report prepared after national consultation (CCME Core Group on Contaminated Site Liability, 1993). British Columbia's legislation is considered consistent with these principles.

Schedule for Implementing Legislation

As noted, the new contaminated sites legislation is not yet in effect. The intent is to finish developing the needed regulation by early June 1994. After approval by the Lieutenant Governor in Council, a period of familiarization and training will be needed. This is planned for the summer and early fall. Implementation is currently projected for October 1, 1994.

What is a Contaminated Site and What is Remediation?

Some confusion surrounds the term contaminated site. Perhaps this is a result of other terms such as hazardous, special or toxic waste sites, or even polluted sites. Not all contaminated sites contain hazardous wastes, nor must hazardous wastes be present for a site to pose potential risks to the environment or human health.

The definition of a contaminated site in the *Waste Management Act* has two key features. Firstly, contamination may exist in several components of the environment - soil, groundwater, surface water or sediment. Secondly, contamination is defined by reference to standards or criteria.

Remediation is another term widely used term. It may also be confusing. Its use in relation to

contamination is often distinguished from cleanup. It is broader, giving scope to a much wider range of options for addressing contamination. For example remediation may include securing and managing contamination onsite without excavation, removal, or relocation. Remediation is not strictly synonymous with reclamation though some of the same objectives and even methods apply to both.

ENVIRONMENTAL PROTECTION LEGISLATION IN BRITISH COLUMBIA

Waste Management Act

The *Waste Management Act* (WMA) is the primary environmental protection statute in British Columbia. The requirements in it are familiar to many -- permits or approvals to discharge waste including wastewater, solid refuse, or emissions to the air. Spill reporting and response provisions of the Act and the associated regulation are also generally understood. Under the WMA as well is a general prohibition against pollution (Sec. 3), and authority for issuing pollution abatement orders where there are reasonable grounds to believe pollution is occurring (Sec. 22). These provisions are not as well understood.

Special Waste Regulation

The *Special Waste Regulation* under the *Waste Management Act* prescribes requirements for managing special (hazardous) waste. While exemptions are provided for tailings and waste rock from mines, management is prescribed for other wastes like batteries, waste oil, asbestos, polychlorinated biphenyls (PCBs), and other hazardous substances such as acids, alkalis, solvents etc. Where soil or groundwater at a site is heavily contaminated, it may also qualify as a special waste and be subject to the requirements of the regulation.

Environment Management Act

The *Environment Management Act* (EMA) has various powers, the most well know of which is the authority for declaration of environmental emergencies. Where immediate action is required to stop discharges, leaks or other situations which are impacting or threaten to seriously impact the environment or human health the Minister may declare an emergency, take necessary action, and recover costs. Action under EMA at the Sumac Ventures site is likely well known. Where soil or groundwater contamination exists and immediate action is required, action has been taken under EMA at contaminated sites.

Pollution Abatement Orders

I wish to return to the matter of pollution abatement orders. A Regional Environmental Protection manager may order a wide range of actions including carrying out investigations, installing or modifying works (e.g. structures, equipment or facilities), or remediating a site. An owner, a former owner, or a person who had possession, charge or control of a substance immediately before it was emitted, released, or discharged to the environment can receive such an order. By wording of the WMA and as established by court decisions, this provision applies retroactively and can be issued to more than one person. An order can be issued whether or not a permit exists and whether or not persons other than those receiving it may also be responsible; Pollution abatement orders can apply to historically contaminated sites. They have been issued at a number of sites to require investigation and remediation. They have also be issued for mine sites.

The uncertainty of pollution abatement orders as they apply to historical contamination has been a primary concern to business. Criteria or guidance are very limited in the WMA as to who can receive an order. Apportionment of responsibility though not precluded is not expressly addressed. The process for investigating and remediating sites is not indicated, and no standards for determining contamination are provided. The ability to determine responsibility for remediation, to plan projects and business ventures with certainty of remediation requirements, and to receive any certification for work done has been a major limitation of the current legislation. More explicit provisions with great predictability are needed.

NEW CONTAMINATED SITES LEGISLATION

Developing The Legislation

Contaminated sites legislation has been developed over 4-5 years in British Columbia. Reference has been made above to initiatives for legislation to implement the "polluter pay" principle across Canada by the CCME. In 1989 British Columbia undertook a review of current legislation and procedures, and of provisions in other provinces and countries (Huestis et al., 1990). In 1991 a discussion paper was issued by the Ministry of Environment (Ministry of Environment, 1991). It discussed necessary provisions for comprehensive legislation and reviewed options to address various issues. The discussion paper was the basis for numerous written submissions, and meetings with many interested and affected parties.

Policy Objectives of the Legislation

Limitations of current legislation and reasons for new legislation have already been touched on. Defining a process for regulating contaminated sites management, defining responsibility, and providing greater certainty have been significant objectives. In summary, the following list of objectives can be highlighted:

- To respond to the general need and call for government to develop and institute a clear process for contaminated sites management and regulation.
To implement the "polluter pay" principle for historical contamination.
- To bring greater fairness to the responsibility for costs of remediation.
- To provide greater clarity and certainty to contaminated sites regulation to facilitate business planning and investment decisions.
- To define a systematic process for managing contaminated sites and specifying regulatory requirements.
- To reduce government exposure to liability resulting from possible judicial review for lack of authority and clarity for regulatory actions, and from remediation costs where responsibility could default to government.
- To ensure authority for cost recovery where government must undertake remediation at high risk sites.

Scope and Emphasis of the Legislation

It has been suggested that the contaminated sites legislation should deal more with pollution prevention to ensure that new contaminated sites are not created in the future. Both the existing WMA and the proposed *B.C. Environmental Protection Act* which will supersede the WMA, have as their major objectives to prevent or minimize pollution. The emphasis of new contaminated sites legislation is historical contamination - that which has occurred from former waste management practices, commercial or industrial activities etc. While creating a deterrent to operating in manner which causes contamination is not the primary purpose of the contaminated sites legislation, it is acknowledged that "polluter pay" provisions will likely encourage more environmentally responsible operations from now on.

Overview of Legislative Provisions

The legislation was developed to deal comprehensively with regulating contaminated sites. Options and

flexibility were sought to ensure unique situations and conditions at sites could be accommodated.

The following summarizes some of the major provisions of the regulatory process established by the legislation.

Identifying Sites -- Site profiles are instituted as a means of systematically and consistently identifying commercial and industrial lands with potential contamination. The questions asked in the site profile form provide a screening mechanism and a basis for decision on whether any further investigations are required. Site profiles are required when application is made for various local development approvals. Vendors of specified commercial or industrial property are required to provide them to potential purchasers. Site profiles are also required with an application for a reclamation permit or an amendment to permit under the *Mines Act*, or when notice to stop work at a mine is given prior to abandonment.

Investigating Sites — Consistent with commercial practice, a phased approach to site investigations is supported by the legislation. A preliminary and detailed site investigations framework is created by the legislation. Requirements will be defined in the regulation. Investigations can be ordered by a manager, or will form the basis for information for independent remediation, voluntary remediation agreements, or development of remediation plans.

Determining if Sites are Contaminated - An optional process is provided for seeking a definitive determination from a Regional Waste Manager on whether a site is contaminated.

Apportioning Responsibility - Responsibility and liability for the cost of contamination remediation is often the most critical issue at a site. Implementing the polluter pay principle is the primary objective. To achieve this, provisions have been included for alternate dispute resolution via an allocation panel, minor contributor status, voluntary remediation agreements etc. Remediation orders may be issued by a manager to one or more persons. Joint and several liability remains as a principle which applies if apportionment is not achieved through other means.

Ensuring Remediation - Whereas the current WMA only provides the pollution abatement order route for ensuring remediation, the new legislation accommodates independent remediation, voluntary remediation agreements, and remediation orders. In cases where immediate action is required to address high risk situations, declarations by the minister are provided for which allow government action and cost

recovery. Options particularly have been provided to accommodate cooperative and non-adversarial action, as well as to minimize government regulatory involvement where independent action is appropriate.

Reviewing Options for Remediation - A section is included in the in the legislation which compels evaluation of the options for remediation, and particularly to promote permanent solutions. However, specific language is included which refers to evaluation of the costs and benefits of remediation.

Approving and Documenting Remediation Completion — During consultation during development of the legislation, property owners and industry groups emphasized that written confirmation should be available from government to document that proposed remediation plans are satisfactory, and on completion that standards of remediation have been met. Approvals in principle are provided as a mechanism to approve remediation plans. When remediation plans have been satisfactorily implemented and confirmatory sampling and/or monitoring as required have been completed, certificates of compliance and conditional certificates of compliance: will be available.

Recording Status of Sites — A site registry is being developed in accordance with the mandate provided in legislation. The status of sites will be recorded in the form of notations in a computer database, for example, indicating which documents have been prepared, whether site investigations have been done, if independent or voluntary remediation has been undertaken, and if certificates or conditional certificates of compliance have been issued. Access to the site registry is planned via *BC Online*, the same system which provides wide business and public access to the registry for land titles and for assessment roll information prepared by the BC Assessment Authority.

Defining Roles and Responsibilities for Regulation — At the present time, municipalities, regional districts, the Ministry of Environment, Lands and Parks, other ministries, and property owners all have varying roles in site investigation, remediation and regulation. Often, however, these roles and responsibilities are not clear. Legislation more clearly defines a regulatory process and the roles and responsibilities of various parties. In doing so, some responsibilities are delegated to municipalities, as well as to district inspectors under the *Mines Act*, and to the division head under the *Petroleum and Natural Gas Act*. Additionally, authority is provided for further delegation of various functions, to municipalities and other ministries (e.g. the Ministry of Energy, Mines and Petroleum Resources) by mutual agreement. The purpose of this delegation would be to simplify and streamline administration of regulatory requirements (e.g. reclamation requirements under the *Mines Act* and remediation under the *Waste Management Act*.)

REGULATORY IMPLICATIONS TO THE MINING INDUSTRY

It is recognized that a number of issues are of concern to the mining industry regarding the *Waste Management Amendment Act, 1993* and the regulation now being developed. Selected issues understood to be of particular interest and concern are discussed in the following sections of this paper.

Defining a Contaminated Site - Applicable Standards

Mine sites are not excluded as a class from the purview of the legislation. Therefore some have suggested that mine sites, because they are often located in mineralized areas, will always be classified as contaminated according to the legislation and relation, if concentration standards of metals are set relative to average concentrations or normal background values of metals occurring in non-mineralized areas. Furthermore, it is contended that wastes from mining, milling and smelting operations characteristically have concentrations of substances exceeding remediation standards. It has been suggested that mining properties as a class should be exempt from provisions of the legislation and regulations, or perhaps that alternate standards should apply to mine sites.

The policy decision of the government reflected in the legislation and regulations is that all sites exceeding standards, whether industrial, agricultural, mining, forestry etc. will be addressed by the legislation. However, provisions are included to ensure that feasible, realistic, and flexible approaches to management are available so that unreasonable cleanup actions are not expected. Similarly, responsibilities are defined and exemptions provided as necessary so that persons involved with a site can predict and determine actions and costs for which they may be responsible.

Numerical standards, with concentrations of various substances which define contaminated sites as well as satisfactory remediation, will be included in the *Contaminated Sites Regulation*. However, both the legislation and the regulation clearly define that risk based standards are also available. Cleanup in the sense of excavation and removal or treatment of contaminants is not always necessary and will not be expected for every site. For example, it is not realistic to expect that landfill sites, waste rock dumps, tailings deposit areas etc. which were built and operated to accept large volumes of waste, will now be excavated and/or treated to meet the substance concentration standards.

Onsite management according to risk based standards is an accepted approach in the legislation. The

regulation and further policies and guidelines will provide procedures for application of risk based standards. According to this approach, after systematic evaluation of both human health risks (risk assessment) and environmental impacts, management measures (risk management) may be required to ensure protection of human health and the environment. Both the evaluation process and the selection of management measures is site specific. Monitoring, inspection and maintenance, and notations on title may be necessary to ensure long term care.

Evaluating the Need for Remediation

If a site is determined to be contaminated according to standards in the regulations, it does not mean it must be cleaned up so that all remaining materials are at concentrations below the standards. Onsite management may be appropriate, or cleanup action may be deferred. The Act makes particular provision for considering the effects of contamination on human health or the environment. It must be emphasized that remediation is not automatically triggered, whether or not impacts are occurring.

Section 20.5 of the Act, the authority for remediation orders, lists a number of factors under subsection (3) which a manager shall consider in determining whether a person should be required to undertake remediation. The first is the adverse effects on human health or pollution of the environment arising from contamination at the site.

Section 20.9(1) addresses the selection of remediation options if remediation is to be undertaken. While permanent solutions are indicated to be preferred, the Act explicitly qualifies this with the phrase "to the maximum extent practicable". Further, factors are given which are to be considered. Again, the potential effects on human health or pollution of the environment is listed. As well, "remediation costs associated with alternative options and the potential economic benefits, costs and effects" are indicated as factors.

Liability Provisions

Liability provisions in tide contaminated sites legislation are among the most controversial of all components. As noted above, one of the objectives of the legislation is to implement fairly the "polluter pay" principle. Where remediation of contamination is necessary it is the intent of the legislation to require persons responsible for the contamination to pay costs of remediation. The liability principles known as absolute, retroactive, and joint and several have been incorporated to implement polluter pay.

The current *Waste Management Act*, pollution abatement order provisions (section 22) already encompass these liability principles. Wording is not as explicit, however. The new legislation by providing language which allows potentially responsible persons to predict their liability, has been interpreted as creating broad, new liability.

Section 20.31 (persons responsible) of the Act casts a broad net of potential liability. However, section 20.41 (persons not responsible) provides a wide range of exemptions from liability to ensure greatest possible focus on those responsible. For example, exemptions are provided for innocent purchasers, for those who would otherwise become responsible due to actions of third parties, and for owners of adjoining properties contaminated by migration onto their land. In addition, the regulation now under development further provides clarification and exemptions to improve fairness. It must be emphasized that all parts of the Act must be considered together, reading one part only leads to erroneous conclusions about implications.

The legislation also makes provision for conferring of minor contributor status (section 20.6) on a responsible person who has indeed contributed a very small amount to contamination at a site. Once determined and declared, a minor contributor is protected from further cost recovery actions by either the crown or another person for amounts beyond that allocated to that person as a minor contributor.

Timing of Remediation and Opportunities for Scheduling or Deferral

Just as the Act does not automatically require cleanup if it is determined that contamination above concentration standards exists, neither does it compel immediate remediation. Provisions are included for scheduling or deferral of remediation with justification.

In section 20.5(3) regarding remediation orders, as noted above when determining whether a person should be required to undertake remediation, a manager shall consider the adverse effects on human health or pollution of the environment arising from contamination at the site. Exposure is a key aspect of potential adverse effects to human health. Many mine sites are remote with little opportunity for human contact. Remediation on account of human health risks may therefore be unnecessary.

Voluntary remediation agreements (section 20.61) provide a flexible means generally, of structuring and scheduling remediation if it is required. In addition, explicit provision is made for a manager to stipulate

that a responsible person is "not required to *commence* remediation for a specified period of time" (section 20.61(3)) under conditions where human health or the environment are not at risk.

Coordination With Reclamation Requirements under the *Mines Act*

Multiple and potentially conflicting requirements under several Acts is a recognized concern. Efficiency of both administration, and complexity for industry are valid criteria for assessing legislation. The contaminated sites legislation and regulation have several provision to facilitate coordination of remediation and reclamation activities.

Site profiles are required on application for a permit or permit revisions under section 10 the *Mines Act*, or with notice of intent to stop work on or near a mine prior to abandonment. Under section 20.11(4) and (5), submission of such profiles, and the initial assessment of them will be undertaken by a district inspector of mines.

In accordance with section 20.5(3) regarding remediation orders, as noted above when determining whether a person should be required to undertake remediation, a manager must consult with the chief inspector appointed under the *Mines Act*. This provision, for example, should provide opportunity for consideration of what actions are already being required under the *Mines Act*, whether further action is required, and if so whether such action is best required under the *Mines Act* or the *Waste Management Act*.

Delegation of administration of a wide range of regulatory functions under the Act is enabled in section 20.91. The minister of Environment, Lands and Parks may delegate to another minister the functions of a manager relating to site profiles, site investigations, remediation orders, voluntary remediation agreements etc. This provides further potential to directly coordinate reclamation and remediation requirements.

SUMMARY AND CONCLUSIONS

Contaminated sites legislation has been passed by the BC Legislature but awaits a regulation before it will become law. The legislation is a major amendment to the current *Waste Management Act* and was prepared to address limitations of the Act with regard to historical contamination.

The legislation is comprehensive in that it covers the full range of management and regulation issues from site identification to documentation of completion of remediation. Together with the regulation, a more systematic process of investigation and management, including approval and documentation of remediation completion is set out. It is expected that greater clarity of process will provide a fairer regulatory system.

Express language is provided in regard to responsibility for costs of remediation. Whereas the pollution abatement order authority of the current Act incorporated the same liability principles, the new legislation and regulation define more clearly both persons responsible and persons not responsible. As a result business planning and investment decisions should be facilitated.

Implications of the legislation and regulation to the mining industry are a recognized concern. The scope of the definition of a contaminated site, applicable standards, liability provisions, and conflicting regulatory requirements are among the issues of concern to the industry. Specific provisions have been incorporated to provide flexibility of remediation actions and timing, and certainty of process and responsibility. Opportunities for coordination of regulatory actions with those of the Ministry of Energy, Mines and Petroleum Resources have also been incorporated.

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