

**Chrowdis Mountain Island Vacuum Limited Lagoon Site
Independent Review
Final Report**

October 20, 2004

Prepared By:
Meinhard Doelle,
Marine and Environmental Law Institute,
Dalhousie Law School

Tom Austin,
ABL Environmental Consultants Ltd.

Introduction

We have been asked to carry out an independent review of the above mentioned file of the Department of the Environment and Labour (DOEL) in accordance with Terms of Reference attached to this report as Schedule A. We have carried out the review in accordance with the process outlined in the Interim Report filed on September 30, 2004. The following is a summary of our observations, conclusions and recommendations based on our review of the file material made available by DOEL, discussions with Sydney DOEL staff to the extent that they were available to us on October 4, 2004, as well as interested members of the community. Included with this report in the form of Schedule B is a selected chronology that highlights some of the events that have occurred with respect to this facility based on the information available to us, with a focus on the last couple of years.

It is impossible for us to conclude conclusively what factors have contributed to the current situation with the handling of this facility, let alone determine the relative contribution made by the various factors. We have, however, tried to identify the most plausible influences, based on the information available to us through the file, communication with DOEL staff, and discussions with members of the community as well as some contact with the owner and his consultant. Where possible, we have indicated our preliminary thoughts on the extent to which a particular factor may have contributed to the problem. Our review starts with the technical issues and questions of strict compliance of the facility with the 2002 approval and the 1994 Interim Guidelines (1994 IG), as these issues provide the context for most other issues considered in this report.

Technical issues

In providing a technical review of the files there is more than one perspective to consider. The technical review assesses the adequacy of the system, and the adequacy of the approval and standards. The technical reviewer's comments on the adequacy of the staff response are included in the general section on staff response.

Overview of September 3 report by Carey Geoenvironmental Ltd.

Test pit program completed July 12, 03 and Drilling of monitoring wells July 14, 03
sampling of wells July 21, 03

The site soils are a gravelly sandy silt which is compacted at depth and which also becomes more gravelly near to the highly fractured diorite bedrock interface.
Permeability has not been assessed. Permeability may be greater (more permeable) than that allowed by the 1994 IG

Depth to bedrock: Testpits indicate 2 to 4.7 m Monitoring wells (MWs) indicate 3.9 to 7.2 m. Comparison of test pit data to borehole data indicates boreholes over estimate depth to bedrock interface.

Soils and bedrock over the site are relatively uniform. None of the test pits found saturated conditions or encountered percolating water. All were moist.

BH #2 and #4 had iron staining and #3 had manganese staining.

Staining of this nature may indicate the movement of a plume and low oxygen conditions which mobilize and redeposit iron and manganese deposits.

Water samples were retrieved from MW # 2, #3, and #4. General analysis was completed. MW #1 was not presented although it was intended to be a background sample. The other samples showed influence of the lagoons in parameters such as alkalinity, nitrate and sulphate. Total coliforms were present in all MWs. Fecal coliform were present in MW #2. These could have been introduced in the monitoring program. MW #3 has the highest elevations of parameters but none are outside of the Canadian drinking water guidelines except iron and manganese.

Continued monitoring is warranted. MW#1 had insufficient volume of water to provide background. A new background well (MW#1) is warranted because without the background quality the impact is difficult to interpret. Based on the information provided additional monitoring wells may be recommended to better define the plume.

Comments on Current State of the Site

There is still a significant gap in the site characterization since only a preliminary report of information has been submitted. Test pits either side of the lagoons indicate 2.5 to 3.8 m to bedrock. The maximum depth of the lagoons to provide a 1 meter of soil for separation from bedrock would be 1.5 m in lagoon #2 and 2.8 m in lagoon #1. The base elevation of the lagoon cells must be defined and the quantity of sludge in the lagoons must be assessed. This should be reported on the reporting cycle in the approval as this indicates when the lagoon may approach capacity and be in danger of overflow to the decant pond or to the environment.

A significant issue in the approval of the site is the fact that the approval appears to allow unlimited volumes of sludge to be dumped at the site while there is no means of managing the sludge or the supernatant liquid. A mass balance would assist in defining the volume of exfiltration from the lagoon which forms the plume indicated in the MWs. To prepare a mass balance the accurate reporting of volumes disposed is required. Those reports are to be submitted quarterly by the owner/operator as required by the approval. No reports have been submitted and the only information is the estimates provided by the operator on the occasion of applying for a permit. The ISHG94 provides methods for estimating the capacity of the lagoons. No one has accurately estimated the capacity or volume of the lagoons.

Excessive use of the lagoons results in increased water levels which reduce freeboard and increase the risk of breached or overtopped lagoons and spills. The chronology indicates that there have been more than one occasion in which septage has been released to the environment without approval or proper environmental protection. The excessive use also fills the lagoons with sludge which does not stabilize before it must be removed. Although it appears that the operator has never applied for approval to remove sludge there is indication that sludge has been removed and deposited in the woods in pits. The deposit without approval would be illegal.

activity under the NSEA. The lack of limits on the lagoon capacity increases the risk of illegal activity.

Excessive use of the lagoons has jeopardized the freeboard on many occasions and increases the resources that DOEL must allocate to inspection. Operators respond by increasing the top elevation of the berms. If this results in higher levels of sludge in the lagoon, this increases the risk of breaching and exposes new unlined areas to sludge which results in increased exfiltration and generation of plumes.

The top level of the berm at the Crowdis Mtn lagoons has been raised by at least one meter (as of Oct 4, 2004). The maintenance of 2' of freeboard is an important criterion in the evaluation of the site performance and operation. This new top elevation places the accepted liquid level of the lagoon above the top of the original lagoon berm and allows potential exfiltration along the interface between the new and old material. The extension to the berms do not look to be engineered as they are less than 1 meter at the top and have very steep side slopes. In order for these facilities to be safe they should be designed by a qualified engineer and approved by DOEL before construction.

The Crowdis Mtn lagoons were never lined to the standard of the 1994 IG, but have been sealed by the sludge which has been dumped in them over the long history of use. It would not be practical to attempt to drain and line the existing lagoons. However allowing the top water elevation to be raised exposes more areas of the lagoon surface which have not been sealed by sludge and which would have higher permeability. Increasing the top level of the berm and liquid operating level should not be acceptable as an alternative to proper sludge and decant water management. In addition to the above, the second pond appears to have been excavated too deep (letter June 1993) and then filled with sludge. No explanation for this action was apparent in the file and this has lead to concern among the concerned citizens. Furthermore, the letter cites the "septage handling guidelines" which were not officially released until 1994 but which in 1994 contained the requirement for a liner having a permeability of 10^{-6} cm/sec. In a version of the guidelines labelled "draft" the liner requirement for stabilization lagoons is not present. There was no request that a liner be provided.

Although the Crowdis Mtn facility has been approved for septage disposal in the past as of 2002 compliance with the 1994 IG has been a condition of the approval. Up to now, the operators have not addressed any more than the superficial requirements. Everyone has recognized that the facility has its limitations as a result of the period in which it was established. Imposition of the 1994 IG cannot be made completely as the facility cannot be made to comply. Variances would have to be allowed for the system to continue to operate. Yet some aspects of the 1994 IG could reasonably have been implemented in 1994. Specifically the site characterization and monitoring system could have been completed without impacting on the actual operation of the site; yet this was never done. Many internal reports, such as field inspection reports indicated that the facility was not having any adverse affect/impact. These conclusions appear to be based purely on visual conjecture and were certainly not scientifically documented, and are not born out by the evidence. Furthermore, there is no indication that the question of whether, how, and when to require existing facilities to meet the 1994 IG was ever systematically considered.

As part of the site characterization study, a request was made to expand the boundaries of the facility. The purpose of the expansion was to provide adequate buffers and to provide an area for construction of a filter field for discharge of the decant pond supernatant. This request was apparently refused by DNR because DOEL could not support the application. DOEL could not support the application because the site characterization was not completed. However when the site characterization is completed to the satisfaction of DOEL then the application may be renewed. This raises a significant concern that the potential for breaching may be transferred to the filter field. The design of these filter systems is not a science and there is not a long history of their application in this manner. The production of algae and the heavy organic loads could lead to premature failure. Expansion of the facility in this manner will result in a need to increased surveillance by DOEL.

There are many instances of DOEL officials citing no adverse affects from the facility. On Feb 16, 1977, an internal memo from Art Crouse identified that “these sites have a high potential for polluting and as such should have at least one groundwater monitoring well”. The basis for their assertion may be the records of total and fecal coliform analysis in MacDonald Brook and its tributaries. There does not seem to be any direct correlation between the samples at the site and at other locations in the Brook for Fecal coliform. Sometimes levels are high and sometimes they are low or non detect. Sometimes the FC numbers at the site will be higher than at the lower brook and vice versa. Coliform bacteria may also be elevated by animal activity such as beaver dams, bears, deer and moose, all of which have no regard for defecating in close proximity to brooks. Animal feces were noted in the vicinity of the sample point below the site. This can confuse matters. The only instance of high levels emanating from the site appears to be when a spill or breach has occurred. At the same time, questions about issues such as sampling locations result in ongoing uncertainty about the reliability of this conclusion.

The evaluation of results is made difficult for an external reviewer because the data from the various sample points in not compiled on a spreadsheet for evaluation (at least it is not contained in the file) and there is no certainty regarding the consistency of the sample points. This later situation results from what appears to be a loose numbering system for samples and poor definition of some sample locations. This may have resulted from alternate inspectors taking samples. Certainly the maintenance of a spreadsheet of sampling results as part of an ongoing monitoring and inspection program would enable better analysis of trends and development of correlations.

MacDonald Brook is used as a water supply by several residents who have expressed grave concerns about the Crowdis Mtn septage facility and their safety. It must be clearly stated that MacDonald Brook is not an appropriate source of drinking water, and should not be used as such by members of the community of Middle River. DOEL conducted sampling in the brook over a period of time subsequent to spring 2003. These results generally depict that the water is within the drinking water guidelines except for total and fecal coliform counts. The information on the sampling of that Brook was of significant interest to the citizens of Middle River and those directly using the water. The information gathered by DOEL staff in file 6 was not the property of Island Vacuum and there was no need to with hold the information from the citizens. Indeed better understanding may have been fostered by sharing the information which was not specific to the site and which was owned by DOEL. Furthermore, DOEL, knowing that certain residents

depended on the brook as a water supply and having information on the safety of the water for that purpose, may have assumed a responsibility associated with public health and a duty to inform.

Recommendations regarding the 1994 IG

The interim septage handling guidelines 1994 should be reviewed and updated. There are several areas which should be strengthened:

- ▶ The design standards which should cross reference the “Standards and Guidelines Manual for Collection, Treatment and Disposal of Sanitary Sewage”
- ▶ The design of facilities and submission of plans and specifications should be by a properly qualified engineer licensed to practice in Nova Scotia.
- ▶ An operational plan should be submitted detailing the management of sludge and supernatant at the facility. The plan must address an accurate method to monitor the use of the facility.
- ▶ An environmental monitoring plan should be developed and submitted by an engineer or hydrogeologist, detailing the monitoring of ground and surface water through four seasons. The plan must include a requirement for quarterly reporting. The documents submitted should be sealed by the author taking responsibility for the accuracy.
- ▶ There needs to be an aesthetic standard for the lagoons. The unsightliness of the lagoons is perceived as a problem. A requirement to provide an enclosed receiving station with a screen to remove large debris would greatly improve the public perspective while reducing the potential for uncontrolled spills.
- ▶ Provision of a greater number of cells in series and possible use of engineered wetlands would ensure better decant quality and reduce the potential failure of decant handling systems designed to infiltrate the effluent.
- ▶ Surface water discharges by septage lagoon facilities should have to meet the same standard as sewage treatment facilities. It would be preferable not to allow discharge to surface water.
- ▶ Owners/operators of septage lagoons should be certified under the same system as operators of sewage treatment plants. This would raise the standard of operations. Septage lagoons should be classified in the same manner as other sewage works.

Recommendations regarding the 2002 approval

- ▶ The approval documents for septage facilities should require compliance with the “Standards and Guidelines Manual for Collection, Treatment and Disposal of Sanitary Sewage” in addition to the existing requirement to meet the Interim Septage Handling Guidelines 1994.
- ▶ The approval must contain enforceable limits which relate to the capacity of the plant and the effluent quality and the sludge handling and disposal.
- ▶ The documents must clearly identify the requirements for environmental monitoring.
- ▶ The document should require all modifications to the facility to be designed and sealed by an engineer.

- ▶ The document should require the operator be certified as a sewage plant operator.
- ▶ The document should allow the minister to release environmental monitoring reports and other compliance information not regarded as proprietary and confidential

Overall Conclusion on Technical and Legal Issues:

The facility is not currently in compliance with either the 1994 IG or the 2002 approval, and there is no realistic way for the facility to come into full compliance with either. Only a newly constructed lagoon would realistically be able to meet the 1994 IG and the terms of the 2002 approval.

The main risk to human health associated with the facility arises from escape resulting from breaches of the berm, overflowing of the lagoon, or other accidental or intentional surface release of either liquids or solids from the lagoon. These risks can be managed if the facility is responsibly operated and regulated, neither of which appears to have been the case to date. At the same time, it is important to point out that MacDonald brook is not a safe drinking water supply, regardless of whether the facility is contributing to the risk.

The risk to human health resulting from groundwater contamination is clearly lower than the risk from surface water contamination. In fact, based on incomplete information available to date, the risk appears to be minimal. Additional work would however have to be done to properly quantify that risk. It is important not to draw firm conclusions based on incomplete data. To do so would be inconsistent with the precautionary approach set out in the preamble to the NSEA.

The facility has not been operated either safely or in compliance with provincial requirements for the period of time that was the subject of this review. Earlier approvals were not available for review. According to information in the file, there appear to have been lengthy periods of time during which the facility operated without approval. Even changes to the facility appear to have been carried out without appropriate approvals.

An underlying assumption for the approach to regulating facilities of this type appears to have been that it was not be economically feasible to require all facilities like this in the province to meet a higher standard either immediately when such standards were developed (such as the 1994 IG) or within a reasonable time period. There should have been an economic analysis done to test this assumption. The analysis should have considered the cost of raising the standard as well as the economic cost of the status quo. It is hard to imagine that operations in need of this service would go elsewhere for this service, or that they could not reasonably pass on the cost of proper treatment. Such an analysis should have been done in 1994 to see whether the 1994 IG should have been phased in for existing facilities after a grace period of a few years. Such an analysis could still be useful to determine how to deal with these types of facilities throughout the province.

Summary of Compliance Record of the Facility

While it is difficult to separate out technical from compliance issues, and the preceding discussion therefore addressed both to some extent, we thought it might be useful to separate out

the incidents of non-compliance with requirements under the NSEA and its regulations and guidance documentation, based on our review of the file. Specifically, it appears the facility has been operating in a manner:

Inconsistent with the 1994 IG since the Guideline was developed in 1994

Inconsistent with the terms of approval under the NSEA since 2002, by failing to meet the 1994 IG, and by failing to meet some reporting requirements, such as requirements to report on volumes deposited at the facility.

Inconsistent with the NSEA, specifically as a result of instances of releases from the facility, and some clear evidence of dumping of solid material in recent years in the area surrounding the site (leaving aside the question of who was responsible for those releases and other incidents)

Inconsistent with the initial direction given by DOEL to conduct site characterization before recommencing operations.

Inconsistent with the terms of the approval at the time of our site visit, when the lagoons were filled within less than the required freeboard from the top of the lagoon (not counting the new berm which had not been approved).

It should be noted that the previous owner and operator was successfully prosecuted for violating the terms of its approval in 2003/04. With respect to the other instances listed here, little or no action appears to have been taken by DOEL staff to ensure compliance. In fact, in a number of instances, DOEL staff do not appear to have understood that the facility was out of compliance. At the same time, DOEL has clearly devoted considerable effort to sampling and visual inspections of the site. In the following sections, we have shared our impressions about the possible reasons for the ongoing gap between the condition of the facility and legal requirements.

Staff Capacity

A thorough assessment of staff capacity was not possible in this review due to time and resource limitations. As a starting point, we can only comment on capacity issues as they arise from DOEL staff handling of this particular file. Furthermore, we do not feel that we necessarily have the full range of skills needed to comment on the overall capacity of the Sydney DOEL staff. In addition, we were unable to meet with one of the key staff members who turned out to be on vacation during our visit. Finally, it is important to keep in mind that our impressions are based on a few hours of meetings with staff, the review of the file shared with us, and a few hours of discussion with some 20 community members who had varying degrees of contact with DOEL officials. Nevertheless, there were some strong impressions that arose out of our contact that we feel you should be aware of, so that you can make an informed decision as to whether these concerns warrant further consideration. The potential concerns we noted with respect to staff capacity include the following:

An apparent lack of basic understanding of the legal framework within which the DOEL is operating, such as an understanding of the legal status of a term of an approval, clarity around the difference between voluntary measures and direction by the DOEL, and a

limited understanding of the powers and protections the NSEA offers DOEL staff to enable it to carry out its mandate.

The Sydney DOEL staff collectively did not demonstrate through our meeting and the correspondence in the file sufficient capacity or skill in dealing effectively and constructively with members of the community who were and are upset about the facility and DOEL's handling of it, and who have expressed serious and legitimate concerns about the potential impact on their health. Having said this, we recognize that the relationship between DOEL staff and members of the community very quickly eroded to a point where it became very difficult to fix. It is also difficult to assess at this stage how much a lack of capacity contributed to the difficulties in the relationship to the community, and how much was caused by other factors, such as DOEL policy on the implementation of the Registry and FOIPOP requirements.

Neither the file nor our discussions with staff indicated a sufficient level of competence on the technical aspects of the facility and its interaction with the surrounding environment.

There appears to be almost a complete delegation of responsibility to the proponent's consultant on technical issues, no indication that proposals by the proponent were as a matter of course critically assessed.

It is not our intent or mandate to assess responsibility or determine the extent to which these impressions on this one file are born out more broadly. To this end, we have intentionally made general statements without commenting on the specific skills demonstrated by individuals within the DOEL Sydney office. It is our recommendation, however, that DOEL take steps to address these issues and decide how ensure that all staff have sufficient capacity to fulfil their responsibilities effectively.

Resources and Staff Time Devoted to Approvals, Inspection and Investigation

In considering the influence of resources on the handling of this file, it is important to separate how staff handled the file before 2002 from how the department responded once there was pressure from the community starting in 2002. At the same time, there could be a variety of other factors that may have influenced the departments approach to this file that are not apparent from our review. It is therefore hard to say how much a lack of adequate resources is responsible for the mishandling of this file. What seems clear, however, is that there was insufficient time devoted to this file until community pressure mounted around 2002, and that the staff we met was inadequately trained on technical and legal issues to deal with this file effectively. This certainly points to lack of resources as a potentially significant contributing factor. Assuming that the level of attention given to this facility until 2002 was typical for a facility that did not receive significant public attention, and assuming that this average level of attention took up the resources of the DOEL, it would be reasonable to conclude that the DOEL had inadequate resources to deal with facilities of this nature from 1995 on when it apparently took overall responsibility for their regulation.

In short, until 2002, DOEL officials appear to have been influenced by concerns about time and resources required to address issues, rather than an objective assessment of what level of

attention was required to ensure the facility was appropriately regulated and was complying with conditions for approval. This, if accurate, would raise concerns over the DOEL's overall capacity to fulfill its mandate. At the same time, it is clear that an incredible amount of time has been spent by DOEL on this file in the past two years.

Staff Professionalism in Dealing with the Owner/Operator

Staff responded in a professional and cooperative approach to the owner and attempted to work through the issues with the operation. This appears to be the case for several reasons including:

- ▶ The recognition of the need for such facilities.
- ▶ The recognition that the facility exists and has certain limitations resulting from its age which make strict application of the 1994 IG impractical.
- ▶ The view by DOEL staff that the operator has been cooperative.
- ▶ The perception that the facility was remote and causing no adverse impact.

Staff Professionalism in Dealing with Members of the Public

With respect to staff's professionalisms in dealing with members of the public, our investigation discovered a different relationship. It should be stated at the outset that the relationship between the community and DOEL staff quickly became very difficult, and it is hard to identify after the fact exactly what led to this deterioration. Furthermore, in spite this difficult relationship, we found no indication that DOEL staff became in any way discourteous or that the actual interactions that took place with members of the community were handled inappropriately by DOEL staff in terms of the tone, etc. At the same time, it is clear from the file that DOEL staff have not considered community members as allies in protecting the environment and human health. On the contrary, members of the community appear to have been viewed from the start as irritants, as a source of frustration and problems for DOEL staff.

It is our conclusion that in form, and language, DOEL staff appear to have retained their professionalism throughout the process in dealing with members of the community who were very upset, and as a result very persistent and angry in their dealings with DOEL staff. Substantively there were problems from first contact. The various difficulties we were able to identify are discussed in other sections of this report, and they include problems with the sharing of information, unnecessarily resorting to strict legal processes before responding to concerns, using FOIPOP as a shield against having to deal with the concerns of the community, inadequate understanding of technical and legal aspects of the file, and the devotion of inadequate attention and resources to this file before the community got engaged.

The following is a selection of factors that appear from our review to have contributed significantly to the alienation of members of the community:

- ▶ The community found out about the facility by accident, not by invitation from DOEL, such as through the approval process.
- ▶ The relationship between DOEL staff and community members got off on the wrong foot from the start, we consider it important to look at the first few communications. Staff

appeared to assume that neither DOEL nor the facility had any responsibility for the water quality concern identified in spite of the past and current problems with the facility.

- ▶ Staff left the impression that they were siding with the owner/operator of the facility despite ongoing violation of legal requirements, and despite legitimate health concerns expressed by community members.
- ▶ The apparent assumption that the facility was not to blame for the water quality problems has to this day not been adequately verified through a proper scientific and technical assessment of the facility and its impact on the surrounding environment.
- ▶ DOEL staff seemed more influenced by fear of liability with respect to loss of business claims from the owner of the facility than a sense of how to make appropriate decisions.
- ▶ The historical practice of one or two yearly inspections were not considered adequate by the concerned public
- ▶ The unsightliness of the site was a factor indicating to the public that the sight could not be in compliance
- ▶ The lack of proper site management of the site despite inspections
- ▶ The lack of monitoring systems
- ▶ Failing to meet with the public when requested
- ▶ Lack of management plans for sludge and decant water
- ▶ Underestimating public concern, determination and capability
- ▶ When the public reported offenses they often felt intimidated by staff
- ▶ Very limited access to information
- ▶ Slow responses to inquiries
- ▶ DOEL should be taking a partnership approach to people who approach the department with information about potential risks to human health or the environment, particularly at a time when resources for DOEL to carry out inspections and investigations on its own are limited, this did not happen here.

Access to Information

Based on our review of the file, it appears that members of the public very much stand outside of the process and must resort to FOIPOP legislation to obtain responses to many of their legitimate questions. This alone creates a perception that staff favour the owner/operator of the facility over concerned citizens. Yet there is much information which is gathered by DOEL which under current freedom of information rules could be shared freely with citizens without resorting to the FOIPOP process. It is important to note at the outset that while there were some instances where the FOIPOP process appears to have been used inappropriately by DOEL staff as a defensive tool to avoid having to respond to requests for information, most of the decisions made on the release of information appears to have been consistent with our understanding of the Departments current policy on the Registry and the FOIPOP process. In other words, the source of the problem in this case appears to go beyond the Sydney staff to the Departments general approach to requests for information.

In our view, from an access to information perspective, the approval process should be open to the public without having to resort to the FOIPOP legislation. This might be accomplished by making the release of any relevant information considered in approving a facility a condition of

every approval. A further step in addressing this problem would be an amendment to the NSEA or the activities designation regulations to ensure similar transparency in the approval process before the first approval is granted. There are precedents for this type of approach, such as the access to information provisions of the Canadian Environmental Assessment Act.

The Registry provisions of the NSEA require access to a number of listed documents during business hours. The process currently applied by DOEL to meet this legal requirement is unduly restrictive, and may in fact be contrary to the provisions of the Act. Other provinces make many of the documents listed in the registry provision available through the internet. At a minimum, the implementation of these requirements should be altered to allow free access to hard copies of such documents at appropriate offices of the DOEL during business hours. To fully facilitate public access to information, files should be organized from the start to separate confidential documents from those that are accessible, so that members of the public can have free and convenient access to information that often has serious consequences for their lives. If done in combination with the recommendations above, this process would result in a level of transparency that alone would have avoided many of the problems that lead to the current situation, and would provide the DOEL with invaluable assistance from the public in carrying out its mandate of environmental protection and the protection of human health.

In short, access to information should be improved, through better understanding and implementation of existing rules, and through changes such as conditions in all approvals that any information used in granting an approval be made available to members of the public on request without having to go through a FIOPOP process, and through further legislative changes to ensure access during the course of approval application processes.

The Role of the Public/Community

As indicated elsewhere, it would appear from the review of this file that members of the community surrounding the facility were at best considered a diversion from the efforts of the DOEL with respect to the regulation of the activities at the facility. At least part of the problem was that the community had no notice of the existence of the facility, nor was it invited to participate in any stages of the approval process. The facility was approved on an annual basis until 2002, and the approval was then transferred from one to another owner in 2004. At no time, based on our review, was the public given an opportunity to participate in the decision whether and under what conditions to allow the facility to continue to operate, even though the activity designation regulations provide discretion to allow public participation in approval of designated activities, and even though members of the community had by 2002 made their interest known to DOEL.

It is our recommendation that the DOEL adopt a policy to use its discretion to engage the public in the approval of any new septage lagoon facility, and the next renewal of any existing facility, and that this be done in a manner that encourages participation. Septage lagoons would provide a good pilot for the implications of exercising this discretion, and would be consistent with DOEL's current approach to the related issue of land application of bio-solids. Based on that experience, decisions could be made about the resource implications and benefits of such proactive engagement in the approval of facilities that are likely to generate public interest more

broadly. To this end, the DOEL may want to consider establishing an actual overall internet based registry of applications for approval that set out the location, the proponent, and a brief description of the nature of the activity proposed. This will allow members of the public to decide whether to participate in the approval process, and should reduce the risk of affected members of the public feeling shut out of a process that affects them and that they wish to contribute to.

Policy Gaps

It is obviously impossible to comment on the overall approach of the Sydney office let alone the whole department to the regulation of facilities of this nature or the regulation of designated facilities more broadly. However, based on the information received from the staff in the Sydney office, it does appear that there are a number of key areas of discretion for which Sydney staff was unable to point to any firm policies or guidelines to guide the decision making process at the working level.

For example there appears to be a process for reviewing a recommendation at the staff level to take enforcement action of some form, through the process of involving senior management, though without any indication of the criteria that might be applied in considering the recommendation from staff. More importantly, there is no guidance, and appears to be no direction to field staff as to what criteria they should apply to decide when to resort to enforcement in the first place. In other words, there is a process once staff at the working level have come to the conclusion that enforcement action is needed, but no guidance to ensure the so called non-regulatory approach supports the objective of compliance and protection of human health and the environment rather than detract from it.

In this case, the problems associated with such an ad hoc approach are obvious. Pressure from the community appears to be the only reason staff in Sydney ever considered enforcement action. Other factors in favour of enforcement action, such as an ongoing failure to comply with the approval, failure to comply with direction from DOEL, failure to meet agreed upon timelines, etc, do not appear to have been given much if any weight. A perception that the owner was cooperating, which was not born out by the file, and a complete misunderstanding of Section 2(i) appear to be the overriding factors in Sydney staff deciding not to rely on enforcement (including Ministerial Order or suspension of approval), even though the perceived cooperation had not resulted in work being done on time, not resulted in compliance with the 1994 IG, and not resulted in compliance with the 2002 approval.

According the Sydney staff, DOEL developed a risk based approach about 4 or 5 years ago, classifying facilities under DOEL control as low, medium or high risk. We were informed that there is a policy on this. It is worth noting that staff did not appear to be familiar with the content of the policy, such as what the consequence of the classification is, other than a general sense that the higher the level of risk, the higher the level of attention required. It is also not clear to us how staff would determine the risk in situations such as this facility, where staff are not getting enough information to be able to determine what the risk is. It should also be noted that staff did not know which category of risk this facility was classified under.

Without attempting to be complete, and without suggesting necessarily that policies on these issues would solve the problems identified, we have listed a few areas where the DOEL may want to consider whether a department wide policy might improve the ability of its staff to implement the NSEA in a more consistent, fair, predictable, transparent and/or effective manner. We have identified the following areas where the DOEL may consider developing policies to guide decision making and the exercise of discretion:

- When to move from a cooperative “non-regulatory” approach to compliance to an enforcement mode as suggested in Section 2(i) in the NSEA
- When to prosecute, when to issue ministerial orders, when to suspend or revoke approvals etc
- When and how to apply or phase in new guidelines or other new standards for existing facilities, either generically or as a matter of course for each new standard developed
- When and how to engage members of the public in approval processes, i.e. how to exercise discretion in the activities designation regulations
- How to deal with access to information generally and more specifically in approval processes to maximize transparency in a manner consistent with provincial FOIPOP legislation
- An overall policy on when to lay charges, when to use which sections of the NSEA and regulations, who should be charged, and what levels of fines to seek.

Schedule “A”

Terms of Reference

The Nova Scotia Department of Environment and Labour consists of twelve agencies and divisions, one of the largest being the Environmental Monitoring and Compliance (EMC) division. This division is broken down into four operational regions, Central, Eastern, Northern and Western region.

The Regional Manager is responsible for overall management of EMC operations of the entire region. The four counties that form the Eastern Region are divided into two management districts, each with a District Manager reporting to the Regional Manager. Staff in the Sydney office, under the guidance of the District Manager, is responsible for Cape Breton Regional Municipality, Victoria County and Northern Inverness County. Staff in the Port Hawkesbury Office, under the guidance of the District Manager, cover activities in Richmond County, southern Inverness County, the Town of Mulgrave and the Community of Aulds Cove.

Island Vacuum and Portables Ltd. (formerly known as George’s Vacuum) operates a septic pumping business and a septage disposal lagoon at Crowdis Mountain, Victoria County. Over the past 24 months, the department has been involved in monitoring and enforcement activity with respect to the Crowdis Mountain facility. Over this period, public concerns have been raised about the condition and operation of this facility and about the department’s response to these concerns.

In order to ascertain the effectiveness of the department’s response to public complaints first originating on October 7, 2002, the Supplier shall review the Island Vacuum & Portables Ltd.’s file to determine whether the department appropriately followed and applied the *Environment Act and Regulations* by:

1. Reviewing the complaints from the public contained in the file and the professionalism of staff in responding to these complaints in regard to the administration of the *Environment Act and Regulations* and the *Freedom of Information and Protection of Privacy Act*, and the collection of evidence regarding enforcement action.
2. Reviewing Island Vacuum & Portables Ltd.’s existing approval in relation to the department’s “Interim Septage Handling Guidelines” dated October 1994, and any other relevant guidelines or regulatory requirements.
3. Reviewing all aspects of the department’s management of the file, including the department’s decision to order Island Vacuum & Portables Ltd. to cease operations and the department’s subsequent decision to allow Island Vacuum & Portables Ltd. to resume operation in consideration of the company’s actions to implement corrective measures.
- 4.

5. Reviewing the department's ongoing monitoring of the operations of Island Vacuum & Portables Ltd. and the department's enforcement of the terms and conditions under which operations were allowed to resume.
6. Reviewing the engineering design and principles employed in the design and operation of the facility and this may include discussion with the company or their engineer, in consideration of application standards and guidelines.
7. Reviewing the adequacy of the existing terms and conditions of the approval and whether or not compliance with these restrictions can support the decision that the facility can operate in accordance with the *Environment Act and Regulations*.

In carrying out this review, the Supplier shall:

8. Meet with appropriate management and staff of the region or division, and with the local Crown Prosecutor responsible for the case, in an informal setting to discuss matters relating to the file.
9. Have such discussions with members of the public who have expressed concerns about the Island Vacuum & Portables Ltd. facility as are helpful or necessary to ensure that the supplier has a full appreciation and understanding of those concerns.
10. Provide an interim report to the Deputy Minister of Environment and Labour by September 30, 2004, outlining progress to date.
11. Prepare a briefing on the Supplier's findings, conclusion and recommendations to the Deputy Minister by October 15, 2004.

Schedule “B”

Chrowdis Mountain Island Vacuum Lagoon Site

Selective Chronology

Oct 4, 2004	TA & MD meet with DOEL in morning and with community in afternoon followed by site visit with community members
Sept 23, 2004	MD & TA meet with W. Lahey and G. Maclellan to initiate study
Sept 10, 2004	Carey Geoenvironmental CGL is on site compacting berms. Letter report on upgrading of berms ditches excavated to divert surface flows
Sept 9, 2004	CGL, reports by letter to DOEL
Sept 3, 2004	CGL reports on testpits and ground water monitoring well installation completed in July
Aug 1, 2004	Spill or seepage occurs at site at base of new work completed on berms, police investigation into allegations of sabotage is closed, investigation into company violation of NSEA/Approval ongoing according to DOEL staff
July 04	Owner does monitoring, and some other site characterization work
May 28/ 04	Transfer of approvals from GV&P ltd to Island V&P Ltd.
Mar 4, 04	CGL letter to DOEL re biosolids management
Jan 26, 04	Detailed Response to LM
Jan19, 04	DOEL to GV&P ltd re moratorium and biosolids mgmt plan, approval is amended to prohibit land application until May, 2004
January 04	Victim Impact Statement of LM, read at sentencing hearing
January, 04	Relationship deteriorates further, becomes openly hostile
Nov 24, 03	Letter from LM complaining about DOEL handling of the file and DOEL response to her complaints

Nov 10, 03 Letter DOEL to owner requesting confirmation of temporary closure as of Oct 31,2003, water level in L#2 to be lowered 1' ; inadequate freeboard being maintained (Nov 6, 2003 inspection) Letter indicates violations of conditions of approval, and requesting confirmation that wastes will not be discharged until the site characterization plan results are submitted

Oct 31, 03 Letter from DNR to DOEL re request to purchase land, asking whether DOEL supports the continuation of the facility, and whether the land is needed to comply with DOEL conditions. Response is that it is too early to say

Oct 03 Further phone discussions with LM

Oct 25, 03 DOEL responds the matter is still before the courts, refers LM to FIOPOP process, offers to talk generically about DOEL approach to these facilities

October 20, 03 More questions from LM

October 16, 03 LM resubmits questions in Aug 6 e-mail, with additional questions, indicating that now that the company has plead guilty, there is no longer a reason not to discuss these issues

October 03 Back and forth about the removal of decant water, and who can accept how much of it

Sept 26, 03 Georges Vacuum pleads guilty to charges.

Sept 23, 03 Lillian MacLeod finds out that company has been given permission to resume operations, calls Pat Murphy, gets very upset, indicates she has witnessed another spill at site. Inspector dispatched. Company does not respond to phone calls that day

Sept 19, 03 Allowed to resume operations until Oct 31, 03; required to draw down lagoons by 6000 gallons deliver to Sullivans, three conditions, approval based on information submitted Sept 9 and 17

Sept 16, 03 E-mail from LM complaining that her Aug 6 letter has not been answered

Sept 15 03 Letter to GV&P re resumption of operations requested “ in addition to action plan by CGL require operational plan for three seasons, and confirmation of disposal arrangements for sludge and decant and schedule for removal, this has to be done before request to resume operation can be considered

Sept 15, 03 Internal e-mail summarizing assessment of state of compliance with 1994IG

Sept 13, 03 Communication from Darryl Burt, statement of concern with facility

Sept 10, 03 CGL letter to DOEL inspected work at site; compaction of berms, erosion control work required

CGL letter report to DOEL
berms upgraded, ditches redirect surface water, snow fencing, propose lowering decant pond level (6000 gal) prior to winter, investigating alternatives for disposal of decant

Sept 9, 03 CGL to DOEL report on progress; stage recorder (staff gauge?) installed, site characterization program submitted to be completed by Oct 31. Decant water discussed; estimate 4000 gal/wk in spring and fall and 8000 gal/wk in mid June to August. Additional land being requested from DNR to provide buffer and decant filter field, CGL requests extension of conditional permit, seeks approval to operate until October 31, 2003

Sept 9, 03 DOEL to owner: cease operations

Sept 5, 03 Ed Carey requests purchase of crown land for filter field, buffer, and access to crown land to do site characterization study

Sept 3, 03 Preliminary report by CGL on geotechnical investigations test pits July 12, drilling of MWs July 14, sampling July 21

Sept 2, 03 Darryl Burt sworn statement breach of berms Aug 22, 03

Aug 29, 03 Notes re meeting about where LM obtained DOEL letter of July 19, 1993

Aug 28, 03 E-mail re site inspection, no problems were noted, some reference to a response to LM's e-mail

Aug 18, 03 charges laid failure to comply with terms and conditions of approval

Aug 16, 03 E-mail from LM with a list of 19 concerns to be addressed at a community meeting on August 27, requesting DOEL presence

Aug 12, 03 DOEL to GV&P Ltd., permission to resume operations for thirty days ending Sept 10, 03 required monitoring of liquid levels on weekly basis, and meeting has to take place on Aug 18

Aug 6, 03 CGL to DOEL letter report:

freeboard .86 m, surface area of lagoons 14 X 45 m= 630 m² , equates to 3.6 weeks at 4000 gal/wk. requesting one month approval to continue to operate

- Aug 6, 03 Questions from LM re the operation indicating 6 violations of 1994IG, other concerns expressed, such as where the sewage is going when operation is closed (in the winter?), where the sludge is being spread, etc.
- Aug 4, 03 CGL to DOEL re decant water disposal options Baddeck and leaching field to west of decant pond, weekly interim monitoring proposed
- Aug 1, 03 CGL to DOEL providing more detail on work done, reporting construction of toe berm to stabilize the bank on the west face of the septage lagoons: designed by CGL, requested variance on separation from boundaries, commitment to interim monitoring
- Aug 1, 03 DOEL to CGL require action plan for decant liquid and description of monitoring frequency
- July 23, 2003 Angry residents meet, SCC issues press release the following day
- July 23, 03 CGL to DOEL report on condition of west embankment; failing in shear, reinforce toe with additional berm material, work being done, ie proposing improvement to the facility
- July 18, 03 MacAskill directed to terminate operations at the site based on July 11 inspection which revealed surface alterations around ponds, sludge dewatering pad started. Failure to comply will result in suspension of approval
- July 16 Alleged spill reported to Environment Canada, Bill Horne contacts DOEL about overflow of lagoon into a brook
- July 15, 2003 Public meeting, complaint that DOEL refused to attend because of investigation
- July 11, 2003 Site visit to determine status, no problems noted in field report, some site alterations noted
- July 7, 2003 Letter from LM to Minister Russel requesting an investigation under Sections 115 and 116 of NSEA
- May 27, 03 Field Inspection in response to complaint, sewage noted in ditch along access road, source was traced back to old lagoon. MacAskill plugged hole in the berm and promised to continue clean up. He was given police

warning. Investigation file opened

Inspection of breach in lagoon#1 April and May 2003 Breach of approvals, deliberate release of septage

Mar 4, 03 Complaint by LM about contaminated well water, Email response PG to LM re bacterial levels in her water and annual inspection of lagoons. Conclusion in the response is that site is inspected annually, there were no problems noted, and that there may be other reasons for the well water contamination. A further inspection as weather permits was promised

Dec 17, 02 Letter DOEL to GV&P ltd: re extension of time to construct sludge holding pad. Extended to June 15,02 Sludge holding pad is a requirement of approval, indication that further delays will not be tolerated

November 2002 Request for extension to construct holding pad until spring

Oct 9, 02 Inspection report: incomplete fencing Ponds are filling quickly due to volume hauled from ferries and holding tanks, improvements to banks made, new pipe installed between ponds, **water from decant pond pumped to wooded area**, no obvious impact, develop sludge mgmt plan by Nov 30,02, report unclear about whether there is a problem, but concludes that there is no watercourse close, no evidence of recent escape of sewage, suggests that facility is up for approval??

October 2002 Complaint from Herman Phillips about bacteria in water attributed to MacAskill's operation results in Field Inspection on October 9. Note Herman Phillips appears to live some distance from Lillian McLeod, in a different community

Jan 17, 02 Approval issued to GV&P ltd

December 2001 Field Inspection Report: Suggests site is in good condition, no violations notes, a recommendation to seed for stabilization, and to approve the facility for the upcoming year

Aug 29, 2001 Internal memo: Crowdis Mtn site permit expired in Aug 31, 1998 indicated G Matheson suspected seepage occurring June 19,2000 recommended 1994 IGbe revisited due to increased volumes and public concern. Suggests 1994 IG are inadequate for this site. Recommendation that approval be updated.

August 27, 2001 Field Inspection: Report indicates no evidence of leakage from ponds, site

under improvements, improvements not fully implemented

Aug 2001 George MacAskill wants to know who complained about the Crowdis Mountain operation

July 30, 2001 Peggy McLeod contacted DOEL with concerns about the Crowdis Mtn operation

June 19,2000 Inspection report from field inspection responding to complaint: Leakage from lagoons to ditch, appeared to be effluent breaking through wall of lagoon

June 2000 Badeck DNR office receives a complaint about a release of sewage from George's Vacuum Lagoons.

February 1999 Indication of intention to issue new license, and that Cabinet has approved conveyance of land, indicates work done over past three years, and need for further work to come into compliance with 1994IG

November 1998 Field Inspection; indicates implementation of improvements incomplete

Oct 26,1998 Letter GV&P ltd to DOE agreed to clear a sloped sludge pad draining back to lagoon, remove sludge from lagoons, raise berms 0.5 m widen 1 m, install fence and new signs

Sept 5, 1997 DOEL to G MacAskill re approval and 1994 IGand biosolids mgmt plan to be developed

August 1997 Pumping and Disposal License Application (110,000 Gallons collected per year)

June 1997 Crown Lease of Crowdis Mountain location to George's Vacuum

Nov 19, 1996 DOEL to GV&P ltd. Reponse to letter from same; requested the following sections of the guidelines be addressed: section 2 excluding 2.2.2 amd 2.3, section 3 section 4 if applicable, section 5.7 sections 6.0 to 6.4, section 6.3 for burial of sludge

October, 1994 1994 IG Developed by DOEL Sydney

Jan 17, 94 DOEL to GV&P ltd: improvements were requested inDec 10, 93. Site is "in compliance with guidelines" Two ponds noted.

DOEL to GV&P
ltd: single lagoon,
no liquids in
pond June 9, 1993

Letter DOEL to Georges Vacuum re: request improvements cited septage
handling guidelines:
newly constructed lagoon too deep, instructed to fill with sludge
site map and plan, gate, 4' fence, staff gauge and record keeping, septage
only to be completed by July 19, 1993