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Chief Review Services

AUDIT OF THE LONGUE-POINTE REMEDIATION PROJECT

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SYNOPSIS

This report presents the results of a CRS audit of the Longue-Pointe Remediation Project. A key objective of this audit was to assess the effectiveness of the processes associated with the management of major contaminated site remediation projects. The audit undertook to identify lessons learned, including a brief look at some good practices followed by other DND/CF remediation projects.

The Longue-Pointe project experienced a number of difficulties, delays and challenges over the course of its life-cycle. The remediation was ultimately sufficient to permit new construction on the site. However, the observed circumstances highlight the complexities, and potential pitfalls, associated with the conduct of major contaminated site remediation projects. It is clear that individual environmental clean-up projects would benefit from cross-fertilization of successful practices, as well as pitfalls

The principal recommendations of the audit focus on the following:

a. Adaptation and application of Defence Management System (DMS) principles and processes to all major environmental remediation projects (Major, multi-million dollar remediation initiatives should be managed as projects, vice activities);

b. Greater visibility of environmental initiatives, including major remediation projects, in the departmental Business Planning process;

c. Development of a specific departmental policy on environmental remediation; and,

d. Rigorous application of the Contaminated Site Remediation Framework as the main technical tool for major environmental remediation projects.

Management has cautioned that there were certain unique circumstances affecting the delivery of the Longue-Pointe project. However, the responsible Assistant Deputy Minister and the Director General Strategic Planning have agreed that the principles and procedures of the Defence Management System (DMS) should be applied to all major environmental remediation projects. Necessary dialogue is taking place between the staffs of both groups to ensure appropriate adaptations are made to the DMS Manual.

Some concern has been expressed as to whether the business planning process is the appropriate mechanism in which to give greater visibility to environmental initiatives. Notwithstanding the opportunity to highlight major projects in the business plan for the Infrastructure & Environment Group, it has been suggested by management that other tools may provide better

visibility to environmental projects. Specifically, consideration will be given to expanding the recently developed Capability Initiatives Database to include O&M projects such as environmental initiatives.

Since the drafting of this report, steps have been taken to formulate a departmental policy on environmental remediation. This policy, due to be released as an Environmental Directive in Jul 01, will formalize the requirement to follow the Contaminated Site Remediation Framework (CRSF) for major environmental remediation projects and will reference the requirement for adherence to the DMS. In addition, the CSRF (a revised version of which will be released in Spring 2001) will incorporate many of the lessons learned since the inception of the environmental program, and give guidance and direction to all levels in the chain of command.

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AUDIT OF THE LONGUE-POINTE REMEDIATION PROJECT

BACKGROUND

1. The Longue-Pointe Remediation was a major project, costing approximately $30 million, and constituting a significant component of the DND Incremental Environmental Program (IEP) over the period 1992-1997. The Project experienced a number of challenges and difficulties throughout its life cycle.

2. Following a request from the Chief of Land Staff, Chief of Review Services (CRS) included a review of the Project in the CRS 1999/00 Review Plan. Notwithstanding that a principal focus was an assessment of the Longue-Pointe Project, a key objective of the audit was to assess the effectiveness of processes associated with the management of major contaminated site remediation projects. To that end, a lessons learned approach was taken using the Longue-Pointe Remediation Project as the primary source of information, and actions associated with other major remediation projects for comparison purposes when applicable.

3. DND's experience with the Longue-Pointe Remediation Project provides a useful source of lessons learned considering the very complex circumstances surrounding its completion. Amongst other things, this project took place during the introduction of DND's Environment Program, a series of significant personnel reductions, Management Command and Control Re-engineering, restructuring of Director General Environment, and relocation of Land Forces Command to National Defence Headquarters.

4. The soil at Longue-Pointe was contaminated by the operation of two companies located on its immediate boundary until the late seventies. One operated a lead refiner while the other recycled batteries. After the Québec Ministry of Environment suspected contamination in 1986, DND engaged environmental consulting firms that confirmed the soil contamination by lead at levels exceeding the acceptable standards for a residential area, and at levels above the standards for an industrial area in some sections of the Garrison.

5. The original risk assessment studies done for DND in late 1989 and early 1990 concluded that the health risks were very limited and that the potential for migration to neighbouring land was very low. It also noted the possibility of a social and psychological impact on the local population. Water contamination was limited to the most highly contaminated zone; removal of the surface contamination would eradicate it. A health risk analysis done in early 1992 established the average level of risk at 1.26 compared to a norm of 1.0. Because it did not pose a significant health risk, the project was given a Priority 3, but it was considered non-discretionary in view of intense public concern. The decision in February 1992 to build the new depot and subsequently the new test track, also impacted on the requirement for remediation.

6. DND opted for a remediation process in late 1991 which immediately led to a Request for Proposal and the evaluation of proposed decontamination contracts in April 1993. The clean-up contract was awarded to the main contractor in April 1994 and the project was completed in September 1997.

INTRODUCTION

7. Despite the challenges encountered throughout the life of the decontamination project, there is evidence that the hard work of all parties concerned contributed to improving the soil condition at Longue-Pointe site. The lead was extracted at the required levels from 70 per cent of the soil volume classified for decontamination, and an alternative remediation method was used for the remaining 30 per cent. Overall, the remediation was sufficient to allow for the construction of the supply depot and the test track on the Longue-Pointe site. It is from this positive perspective that the observations describing the difficulties of the project are presented. These observations have been grouped under three headings: a) decision to decontaminate the site; b) responsibility for the project; and, c) project management.

8. The review concentrates on the managerial processes and activities that led to the decision to award the contract as well as those followed during implementation of the remediation. This analysis can then benefit future major remediation projects and consequently, the Environmental Program.

DECISION TO DECONTAMINATE THE LONGUE-POINTE SITE

9. Upon the confirmation of the high level of lead contamination at the Longue-Pointe site of Canadian Forces Base (CFB) Montréal, all DND parties recognized the requirement to decontaminate in order to allow industrial use of the land, and later, to allow building of the test track and the transfer of land to the civilian company that would build and own the supply depot. The same certainty did not exist with respect to the most appropriate decontamination method, especially in the absence of a specific remediation policy. The performance objectives for the remediation method varied throughout the planning and the clean-up phases of the project, and they were not necessarily communicated officially and effectively, nor endorsed by all parties. The lack of firmly established objectives impeded the decision-making process, which was marked by much iteration, even after the analysis of the bid proposals was completed. Unclear objectives also jeopardized the continuing support for the selected extraction method throughout the project.

10. From the early time of identifying the contamination problem, personnel at CFB Montréal and Force Mobile Command Headquarters (FMCHQ) requested the involvement of Director General Environment (DGE) in assessing and approving the remediation option. CFB Montréal and FMCHQ resources did not have the requisite expertise in environmental sciences. Further, they did not have the decision-making authority nor the financial resources for such a project. After attending a presentation given by the CFB Montréal Office of Primary

Interest (OPI) in late 1991, DGE verbally gave this OPI the latitude to select the remediation method. This led to the decision to opt for a specific method i.e., lead extraction. Although not an irrevocable decision, the selection of the lead extraction method and the pre-selection of related technologies, launched the project on a track that raised expectations outside of the Department, mainly from potential contractors.

11. In April 1994, subsequent to extended decision-making activities, DGE agreed on the award of a contract through Public Works Government Services Canada (PWGSC) for decontamination of the soil using a new lead-extraction technology. Through an earlier bench test, after overcoming logistics difficulties, the contractor had proven the efficiency of the technology on a relatively small volume of soil; the technology was still unproven on large volumes. No other risk assessment was done relative to this technology and no attendant project profile risk assessment has been carried out.

RESPONSIBILITY FOR THE LONGUE-POINTE PROJECT

12. There was a change of OPI for this $30 million project because the first OPI, CFB Montréal, and FMCHQ, did not have the specialized expertise necessary to manage such a complex environmental project. This change took place after the bid proposals had been received, but before the contract had been awarded. CFB Montréal took the following actions between the late 1980s and June 1993:

a. characterization of the soil and study of the waters;

b. consultation with Environment Canada and the provincial authorities;

c. risk assessment study of the contamination;

d. pre-selection of technologies for lead extraction;

e. evaluation of selected technologies;

f. running and evaluation of bench tests;

g. soil gathering in cells;

h. evaluation (but not awarding) of performance-based contract proposals for the decontamination; and

i. awarding of contract for environmental assessment services and eventual supervision of the decontamination work.

13. At this point, in 1993, following a request from FMCHQ, DGE became responsible for all aspects of the management of the project, including the awarding of the clean-up contract, the management and supervision of the clean-up, landscaping and follow-up activities, and the contract administrative settlement. This significant transfer of responsibility, affecting at least four main players (CFB Montréal, FMCHQ, DGE, and PWGSC), had not been formalized. No structured process was used to implement the passage of information and responsibilities between the OPIs, or to identify the stakeholders and their respective roles under the new management team. Some internal difficulties encountered throughout the project can be related to this unstructured transfer of responsibility. Although actions were taken much later in the project life to rectify the situation, the foundations for constructive working relationships within the Department were missing and the departmental stakeholders considered that their concerns were not addressed satisfactorily.

14. The OPIs did not assess the complexity of the project, and therefore the project management process did not incorporate the necessary managerial or technological mitigating measures. The principal complications were the sensitivity of the matter from the perspective of the local citizens and media, the constraints imposed by the local municipality, the impact of provincial environmental legislation, and the risks associated with the selected clean-up technology.

15. Another major source of contention affecting this project relates to the legal, as opposed to administrative, responsibility conferred on individuals by the applicable provincial and municipal legislation. The various, and sometimes dissimilar, interpretations of the legislation given by legal staff and the provincial authorities throughout the project, confirm the complexity of the issue. Nevertheless, their advice contains one common denominator which, expressed simply, is the obligation for all individuals who are in any way linked to the project, to apply due diligence. However, the project management process was not necessarily structured to be formally attentive to the inputs of the various stakeholders that may have contributed to the observance of due diligence.

MANAGEMENT OF THE LONGUE-POINTE PROJECT

General Management

16. This major decontamination project was not managed to take advantage of the processes associated with the Defence Management System (DMS), then-CFP 125. For instance, it did not involve a Senior Review Board (SRB) or a Charter. The management structures and processes used under the first and second OPIs were not formalized. One effect of this was that not all possible stakeholders were systematically involved since their commitment was not secured and their respective roles and responsibilities were not clearly established from an early stage of the project.

17. In addition to the change of departmental OPI in its early phase, this project was marked by several changes of personnel in key positions. At least four successive officers (mainly at the Captain and Major ranks) acted as the DGE Desk (or Coordinating) Officer, while three individuals successively filled the on-site project manager position. One change of Desk Officer occurred at a critical point, in July 1995, two months after the soil processing treatment had started and concurrent with the appointment of the third successive on-site project manager.

Continuity and Expertise of Personnel

18. Upon taking charge of the project and after securing the availability of a specific individual, DGE retained the services of DCC as the on-site project manager. DCC had originally refused this supervision mandate in view of the expertise required. The selected individual left the position approximately eight months later and, by the end of the project, three people had successively filled that position (the last two individuals had been previous site engineers). The first manager eventually had a distant link with the project from his post in the DCC regional office. Although DGE was involved in the selection of the first on-site project manager, he was not involved for the two other nominations.

19. The specific project responsibilities included in the DCC mandate were already included in a contract awarded to a consulting services firm by CFB Montréal, following DCC's original refusal. The qualifications of this firm for exercising the supervision mandate, which included technical quality control and quality assurance, had been confirmed through a competitive process whereby specific criteria had been assessed. The adequacy of the qualifications of DCC and its designated project managers had not been similarly evaluated. Yet, DCC was eventually responsible for supervising the work of this consulting firm as well as that of the main contractor. Likewise, and despite DCC's then limited expertise in major environmental remediation projects, the project managers' performance was monitored only from a relatively distant, peripheral perspective, by Desk Officers fulfilling other duties and without specialized expertise in environmental sciences.

Roles and Accountability

20. Throughout what could be considered the project implementation phase (April 1994 to September 1997), there were duplicative mandates and confusion about roles. In fact, the documented mandates and titles of most individuals involved in this project vary from one source to another and from time to time. This report uses the terms that best describe their actual roles.

21. The overlapping mandates of DCC and the consulting firm concerning the supervision of the main contractor's performance lasted over one year, until DGE took action to rectify the situation. In addition to blurring accountability for this supervision, this circumstance challenges the effectiveness of the supervision over the contracts (the main contractor, the consulting firm and DCC). The awarding of a revised and limited role to the consulting firm eliminated this

duplication; however, the firm's role was again significantly modified and enlarged eight months later. There is evidence that this latest modification was not necessarily well communicated to all parties, thereby creating confusion amongst the main players.

22. The roles and responsibilities of other stakeholders in the management of the project were not always clear, well understood and respected. For example, throughout the project, both PWGSC and DCC had the official mandate to manage the clean-up contract and only the excellent cooperation between the individuals involved ensured effective communication with the main contractor. Additionally, PWGSC, DCC and DGE frequently discussed matters directly with the main contractor. This occurred even though, as defined in DCC's contract and as explained during the first project meeting in the presence of all these stakeholders, the on-site project manager had been delegated the authority for communications to and from the main contractor. Finally, the role and responsibilities of CFB Montréal following the change of OPI were never clear to, nor understood by, all stakeholders.

Communication

23. The quality of communication greatly varied within the project. The communication process between the consulting firm, DCC, and the DGE Desk Officer was reasonable. However, the process for communication with the main contractor was not respected by all parties, even where it had been clearly set out. Since CFB Montréal did not have an officially recognized role in the project, the management process did not include measures to satisfy their possible requirements; therefore, communication was on an ad hoc basis. The only formalized communication link with CFB Montréal was through the minutes of project meetings; the on-site project manager systematically forwarded these minutes to the Base Construction Engineering Officer. The communication process for the local population and media was not well established. Although a communication plan was in place and these stakeholders received information, there was internal confusion and misunderstanding as to who had this responsibility and who should be the authorized departmental spokespersons.

IMPROVEMENT OPPORTUNITIES FOR ENVIRONMENTAL PROJECTS

Causes and Effects

24. The difficulties experienced by the Longue-Pointe project have affected the relationship between the national technical authorities and the local land-owner. The effects are still apparent at the time of this audit. In addition, it has caused other parts of the DND/CF community to question, to this day, the validity and cost of the remediation method selected for Longue-Pointe. Not insignificant are concerns regarding the prudent management of departmental funds by environmental authorities.

25. The selection of the remediation method was influenced by actions taken at the early stages of this project, by well-intentioned personnel not necessarily expert in environmental issues, but demonstrating a high sense of responsibility and relying entirely on advice given by entities outside of DND. This selection was not based on a specific departmental policy (non-existent at the time) nor was the technical value of the outside advice and recommendations confirmed by appropriate departmental authorities. Additionally, the personnel who put in motion actions leading to the selection of the remediation method did not have the financial responsibility for the project since the funds held centrally had not been devolved through the chain of command. Nevertheless, once engaged in the remediation option, the Department could not withdraw from it regardless of the appreciation subsequently brought by the functional authorities. The Department had to assume a substantial cost increase from the originally approved funding level. This affected its overall funding for environmental activities over several years when the original completion time of fall 1993 was delayed until September 1997. Likewise, the Department had to face an extremely high-risk situation, with virtually unknown and unpredictable evolution and without adequate preparation.

26. Clearly, DND/CF would benefit from avoiding similar situations in future. To this end, this audit presents factors that can mitigate the difficulties affecting the Longue-Pointe project and that may have similarly affected other environmental remediation projects. The circumstances which contributed to those difficulties were examined in light of the management and accountability systems now in place within the DND/CF. Therefore, the Defence Management System, the Defence Business Planning, the DND/CF Principles of Organization (Authority and Accountability), and the Contaminated Sites Remediation Framework constituted the main criteria for this review. The principles supporting these well-established and recognized systems provide some of the elements that would enhance the management of major remediation projects. Other constructive elements, not explicitly detailed in these systems, but certainly inherent to their design, are also identified and will be discussed.

27. The majority of difficulties observed throughout the Longue-Pointe project are linked to the degree to which the following requirements were fulfilled:

a. personnel with specialized expertise in both project management and environmental sciences, dedicated to the project from its earliest stage;

b. formal decision-making process;

c. formal remediation policy;

d. formally and clearly defined objectives to be met by the remediation;

e. detailed risk assessment for the project;

f. formal recognition and involvement of all possible stakeholders;

g. clearly defined roles, responsibilities and accountability;

h. establishment of trusting relationships with all stakeholders;

i. effective communication processes among all involved parties;

j. continuity in project management; and

k. in the case of a change of OPI, a structured transition process.

28. The requirements in subparagraphs c, d and e above are essential for, and integral parts of, a formal decision-making process (subparagraph b). Similarly, the elements cited at subparagraphs f, g, h, i, and to some extent, j are fundamental to a structured management process. These interrelations are useful when evaluating the possible impact of the application of the DND/CF management systems to the major environmental remediation projects.

Contaminated Site Remediation Framework

29. A rigorous application of the protocols established in the Contaminated Site Remediation Framework (CSRF) (Draft Version 2 dated April 1996) could contribute to reducing the risks associated with the management of major contamination sites. These protocols, for which interpretation and application require environmental science expertise, provide essential guidance from a technical perspective, and in this regard, the CSRF is pertinent to major remediation projects. Conversely, the CSRF is not a policy and it does not constitute a project management process. It does not address the wider issues of major projects such as the roles and responsibilities of the various stakeholders, the financial administration, etc. It allows a large element of subjectivity at decision-making points without providing a systematic managerial process towards that point. Therefore, the CSRF represents a useful, technical tool for use within a project management system.

30. The DND policy on environment is contained in the Defence Administrative Orders and Directives (DAOD) 4003. It refers to the DND Sustainable Development Strategy for which the action plan contains specific goals. At this time, the departmental policy on environmental remediation is not documented and promulgated, but DGE personnel advise remediation project OPIs, on the departmental philosophy as needed and/or requested. In the absence of a specific remediation policy, the policy and procedures for decommissioning and property transactions can assist local authorities especially when establishing the objectives of a remediation project. Without specific guidance, local authorities could opt for well-intended but inappropriate (insufficient or excessively expensive) remediation decisions.

Defence Management System

31. The application of the Defence Management System (DMS) processes and the related project management principles would facilitate the achievement of most of the requirements that were unfulfilled in the case of the Longue-Pointe project. Nevertheless, to manage effectively major environmental remediation projects, the process will need to give attention to the specialized technical expertise required for the specific projects. Consideration must also be given to the challenges associated with the complex and emerging character of the related technologies. The fact that consulting firms may offer only limited expertise relating to the latest emerging technologies represents a serious limitation considering the Department's use of external services. Hence the Department may have to develop internal specialized expertise to avoid total reliance on external agencies. This may be accomplished in consultation with ADM (S&T). Furthermore, the professional judgement of these experts is essential for establishing validated selection criteria and evaluating the competency and proposals of external firms that could be hired to perform consulting services, site supervision or other project management functions, regardless of whether or not a competitive process is used.

32. The DMS processes would help ensure that the investment of public funds in the environmental remediation projects is in line with the corporate program and that the use of these resources is subjected to adequate control and accountability. Moreover, the application of the DMS project management principles, especially those related to project oversight, project monitoring and contracting strategies, would reduce risk while better allowing for efficient, economical and effective completion of these projects. The development of a Charter would ensure the establishment of a definite mandate and clear objectives to be met by the project. It would assist in the identification of all stakeholders, the recognition of their respective roles and responsibilities, the registering of their areas of concerns and the enlisting of their support as team members/OCIs in the project.

33. Performed by individuals experienced in project management and environmental sciences, the project risk assessment activities prescribed in the DMS project management principles, would identify high risk issues particular to the project, thereby alerting the need for suitable mitigating actions. Such actions could then address the following significant issues for major environmental remediation projects:

a. the lack of reliability of total cost and yearly estimates prepared prior to bid proposal or actual work on-site. This leads to increased total costs, large amount of unspent funds in a given year and spanning over additional years;

b. the special financial requirements in terms of timelines required by the projects because of external limitations imposed to their activity cycle;

c. the typical evolution of the original problem definition which often results in the involvement of additional stakeholders and possible significant impact on the management approach;

d. the shortage of specialized expertise in the area of environmental remediation; and

e. the requirement for transition guidelines and their strict application in time of transfer of responsibilities for key managerial positions.

34. The detailed information gathered through the more disciplined/structured DMS methodology would promote a more accurate assessment of the level of specialized expertise and the overall resourcing required for the project. Resourcing (including training) should consider the complexity of the technical issues, the applicable legislation, and the supervision of the contracts as well as the special need for communication with all stakeholders caused by the high sensitivity of the projects. The DMS decision-making process would facilitate timely decisions, at the appropriate level of authority. Furthermore, it would provide official documentation that will support continuity and corporate memory. These aspects are significant considering the financial value of such projects and their impact on the overall Defence Services Program, and recognizing that the complexity of the project is increased by limiting factors such as location, weather, and large number of stakeholders with differing cultures and perspectives.

OBSERVATIONS FROM OTHER PROJECTS

35. General. In comparing the management of the Longue-Pointe project to that of the more recent major environmental projects, we first note that very little, if any, information and experience was passed from one to the next. This is due in part to the fact that they are managed by different OPIs and in relative isolation from each other. Successful management practices with respect to these individual projects derive from positive situational factors rather than from the sharing of experience, except for a notable advisory intervention by DGE regarding the Saglek project at an advanced stage of the definition phase. Nevertheless, to the extent that these projects reflect the implementation of some of the improvement opportunities mentioned earlier in this report, they serve to confirm their positive effect on major environmental remediation projects. Similarly, the recurrence of some weaknesses amongst them supports the requirement for initiating improvement processes.

36. Saglek Experience. Despite its change of management team and a temporary administrative set-back, the Saglek PCB remediation project has benefited from the following features:

a. personnel highly qualified in environmental sciences and legislation specially dedicated to the project;

b. use of internal expertise (Royal Military College/Environmental Scientific Group);

c. use of other government agencies expertise (PWGSC/Science Procurement Branch, Environment Canada);

d. clearly set objectives;

e. clear roles and responsibilities for the day-to-day on-site operations of the project;

f. effective communication amongst stakeholders; and

g. active involvement of all stakeholders and attention to their concerns.

37. Conversely though, it faced difficulties due to the lack of formalization of the responsibility and authority for all of the personnel involved with the project and due to difficult contracting conditions. Also, from a technical perspective, it could be argued that the project could have benefited from a more comprehensive environmental assessment at an earlier phase. It would have then permitted a more accurate cost estimate and ensuing funding request proposal. In this specific case, the advantages of this knowledge would have to be weighed against the disadvantages it could have caused for the overall management of the project by delaying the on-site remedial actions. A more rigorous application of the CSRF in the management process would ensure the best possible assessment.

38. Goose Bay Experience. The situation for the fuel recovery project in Goose Bay differs significantly from the Longue-Pointe and Saglek projects since it does not involve a main clean-up contract with an outside firm. The physical structure for the remediation belongs to, and is managed by, the local authority. This project also reflects the advantages of some improvement opportunities. For instance, in addition to being managed by personnel with expertise in environmental sciences, it was subjected to a structured technical process that set clear objectives, reduced the unknown factors and ensured judicious spending of funds. Furthermore, the environmental expertise of the local staff permitted the selection of an acceptable technology through a collaborative effort with outside consultants (rather than through dependency on the consultants).

39. Despite the positive aspects of this project, the local environmental personnel are managing it at the expense of their other regular, established functions. This tends to reinforce the need for adequate specialized personnel resources for major remediation projects. Furthermore, the OPI faces difficulty in recruiting and retaining personnel with the necessary expertise to assist throughout this project, partly due to its location. This confirms the need to

acknowledge this limiting factor at an early stage of any project and to put in place measures to address, or at least reduce, its impact. Practical solutions may result in the need for more appropriate compensation and may affect the costs of major remediation projects.

40. Personnel Resources. A noteworthy common point between the OPIs of these projects is the limited expertise and resources in at least one of the two essential areas: environmental sciences and legislation, and project management. Although the departmental organizations in charge of the most recent projects employ permanent Environmental Officers, these officers are not in sufficient number to oversee a high cost and complex project in addition to fulfilling their regular duties. Unfortunately, personnel with sufficient qualifications and experience to run these multimillion-dollar projects are not commonly available, especially for remote sites and for the employment conditions offered (short-term employment offer, compensation, etc.). The lack of expertise in project management and of formally-structured management processes have not been fully satisfied in any current project, which eventually affects the overall effectiveness of the environmental program.

41. Contract Supervision. Be it contracted out competitively to specialist firms or mandated to DCC, the statement of work as well as the expertise of the human resources appointed by the firm affect the quality of the on-site supervision. Some progress has taken place in this aspect since the time of the Longue-Pointe project. For instance, the management of the Saglek project has refined the terms of reference of the supervision/monitoring mandate to adapt it to the performance-based clean-up contract. Unfortunately, there remains a lack of corporate knowledge and experience in dealing with this type of contract. Also, despite the professional evolution experienced by the environmental field in the past ten years, it is impossible to evaluate the on-site supervision capability of environment consulting firms without carrying out an objective and competitive test based on firmly established criteria related to the specific project.

42. Structured Project Management. The recently formed Directorate of Construction and Properties Services Delivery (DCPSD) proposes to take on the management of the remediation projects under directorship appropriate for each specific project. As noted, two out of three original OPIs as well as DGE, formally rejected responsibility for the management of the major projects for which they had become responsible. Accordingly, the DCPSD option holds promise. Depending on its consolidation of knowledge and experience, it could become a centre of expertise. Since DCPSD has not yet managed such a project, the assessment of this option is only based on the intention expressed by DCPSD and the experience of North Warning System Office personnel in discussing the imminent transfer of the Saglek project to DCPSD.

43. DCPSD intends to offer project management in accordance with the DMS, establishing project offices resourced with personnel with the expertise required to satisfy the specific needs of the project. This approach would alleviate many of the difficulties encountered so far by the projects' OPIs. Nevertheless, if the problems caused by factors other than the lack of structured process are not addressed, the same or new difficulties will be encountered. In particular,

DCPSD will need to have access to a departmental remediation policy and to secure availability of specialized expertise. DCPSD will also have to give attention to the inherent risks associated with these projects, the difficulty in arriving at firm cost estimates, the shortage of expertise in the field, as well as the need for established standards of supervision/monitoring for performance-based decontamination contracts.

CONCLUSIONS

44. Most of the conditions that acted to the detriment of the Longue-Pointe project have not been eliminated and are likely to have implications for the management of current and future major environmental remediation projects. Some of these difficulties could be minimized if these multi-million-dollar projects were managed in accordance with the policies and processes established for the Department's major projects i.e., the DMS. Nevertheless, project management challenges specifically inherent to the environment milieu need to be addressed over and above the implementation of the DMS.

RECOMMENDATIONS

45. The following recommendations are based on the observations noted throughout this review:

a. The principles and procedures of the DMS should be appropriately adapted, and applied, to recognize the specific characteristics of major environmental projects, including inherent risks. (Multi-million dollar remediation projects should be managed formally as projects vice activities.);

b. Greater visibility should be given to environmental initiatives, including major remediation projects, in the departmental Business Planning process;

c. A specific departmental policy on environmental remediation should be developed; and

d. The Contaminated Site Remediation Framework (CSRF) should be rigorously applied as the main technical tool for major environmental remediation projects, within the formal management process.

MANAGEMENT RESPONSE

ADM(IE)

a. Recommendation a. is agreed to by Director General Construction and Property Services (DGCPS) as it applies to some of their work as well. It is acknowledged that the current version of the DMS allows for large remediation projects to be excluded from the process. A minor modification proposed to the DMS would allow for environmental projects above the $5M estimate to be formally included in the requirement to follow the structured DMS approach. DGSP staff will be contacted by DGCPS per the action plan to rectify the situation. Furthermore, pursuant to DAOD 4003-1, a draft Environmental Directive to be issued by DGE will make reference to the requirement to manage multi-million dollar remediation projects as per the DMS. A target date is estimated at 1 Jun 01.

b. The issue of funding for the "environmental program" is currently under review. One of the critical steps in this process is the ongoing completion of an environmental pressures study which will allow the identification of environmental liabilities or accountabilities that will affect DND in the near to long term (5 years). Application of the study will ultimately serve to recommend a proposed way-ahead for funding of these pressures either through a program similar to the existing Corporate Environmental Program (CEP) or through Level 1 Business Plans. Nonetheless, the visibility of the large projects in business plans is also important and therefore should be highlighted in the final planning and funding approach. Any project approved by the Program Management Board (PMB) requires the Project Director to obtain the funds through their business plans and to issue the funds to the PM. This can very easily be applied to clean up projects as long as the DMS process is followed. The action is for DGE to pursue with DGSP determination of the best way to achieve this accountability and visibility in the current Business planning process. Target date of 1 Jun 01 is also recommended, subject to staff availability.

c. A new departmental Environmental Directive on contaminated sites is due to go to Level 1s for comment by 1 Apr 01 (with promulgation planned for Jul 01). The required guidance and direction to all levels in the chain of command will be included. It will also detail their responsibilities to initiate site remediation and/or risk management plans and will include to what recommended levels sites should be cleaned up to (provincial; CCME, or federal guidelines). The directive will include the required structured approach to the management of multi-million dollar remediation projects as per the DMS and will require all organizations within DND and the CF to have their own policies and procedures in place to meet the requirements of the Directive; and

d. The requirement to follow the CSRF (currently under revision and due for comments and re-release in spring 2001) will be formalized in the aforementioned Environmental Directive. This action should be completed by 1 Jun 01. All three ECSs are the OCIs for this action and follow-up.

DGSP

a. The processes inherent in a DMS project are key to bringing the necessary rigour to large environmental projects, or to most any large O&M project for that matter. Indeed, the current DMS Manual Chapter 8 outlines processes and authorities for O&M projects and notes that "environmental clean-up" would be an example of such a project. However, the present chapter is soft on the actual requirement to establish a project. It is intended to strengthen this chapter significantly in the next amendment to the DMS Manual planned for Spring 2001; and

b. A major revision to business planning in the department is underway. While it may be premature to predict at this point exactly what will be in the various levels of future business plans, the intent is to streamline and simplify their production. Currently, only the most important of projects are specifically mentioned in these plans. Therefore, while environmental issues in general may be highlighted as a corporate priority and ADM(IE) would in all likelihood elaborate on this in his Level 1 plan, business plans are not necessarily the vehicle to give visibility to specific projects. A Capability Initiatives Database (CID), a web-based data bank of all C-status and below capital equipment projects, has been developed. This database can easily be accessed by anyone through the Defence intranet. Moreover, it is kept up to date by the project team on a continuous basis, vice once per year as in a business plan. The CID can readily be expanded to include O&M projects and, I believe, can best provide the visibility desired for environmental projects.