Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

INAC Project Detailed Work Plan

FOX-A (Bray Island) Remediation Project

Site Number:

SB031

Submission:

Initial submission - 2006/07 fiscal year

Date:

January 10, 2006

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Reviewed and Approved by:	Natalie Plato Director	
Reviewed and Approved by:	Michael Nadler Regional Director General	

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Appendices

1.0 Project Title and Location

Project Official Name: FOX-A (Bray Island) Remediation Project

Region: Nunavut

Location: 170km east of Iqloolik (69°13'N - 77°14'W)

2.0 Introduction

Indian and Northern Affairs Canada (INAC) has retained Environmental Services, Public Works and Government Services Canada to assist in the compilation of all regulatory and contracting requirements for the assessment and remediation of the former Intermediate DEW Line site on Bray Island, located in Nunavut.

This work plan consists of an evaluation of the existing site information available on the Bray Island site, identification of any information gaps and the compilation of any required reports to fill in the information gaps. Based on all information available a Phase III Environmental Site Assessment will be completed in the summer of 2006.

Site Characteristics

FOX-A (Bray Island) is located in the northeast portion of Foxe Basin approximately 170 km east of Igloolik and 175 km northeast of Hall Beach. An Intermediate Distant Early Warning Line site (FOX-A) operated at the site until 1963. The main station site is situated on a ridge, 3 km inland from the western shore. A gravel road leads from the beach barging area to the beach airstrip and to the main site. The main site is approximately 7 km from the beach and comprises an airstrip, garage, construction camp, Inuit House and existing Short Range Radar facilities.

Bray Island is a low lying, flat landscape which has a thick mantle of fine-grained morainic deposits (glacial till) with poorly drained depressions which are either remnant ponds, small lakes or organic landforms. There are raised beaches throughout Bray Island which indicates a fluctuating marine limit which is related to deglaciation history in this area. Calcareous limestone is the main type of bedrock on Bray Island.

The terrain at the beach site is a series of raised gravelly beaches with distributary channels which transect these features in a perpendicular manner to the marine environment. These channels are the main pathway into the marine environment in this area. Above the raised beaches, the terrain is dominantly morainic sediments with low lying and poorly drained organic deposits.

The vegetation at this site is characterized by sedges, willows, mountain avens and moss in the low lying, wet areas. In the drier areas willow, flowering herbs, sedges and grasses predominate.

Site Risks and Liabilities to the Crown

An environmental study has been conducted at this site in 1994 by the Environmental Sciences Group (ESG) of Royal Military College. The main environmental concerns are:

-soils contaminated with PCBs, heavy metals and hydrocarbons;
-buildings are in poor condition containing asbestos and PCB-amended paint;
-unknown liquids remain in scattered drums, barrel caches, pipelines and fuel tanks;
-existing landfills are in poor condition, potentially containing hazardous waste; and
-scattered debris.

Policy Issues

There are no policy issues, although there is still the Environmental Assessment and Permitting Process to be completed for the Phase III ESA. Clean up criteria will follow the INAC Abandoned Military Sites Remediation Protocol.

Background

ESG completed an environmental study of the FOX-A (Bray Island) site in 1994, however, additional information will be required to provide updates of soil contamination and hazardous materials present as well as additional sampling of surface water bodies based on the Abandoned Military Site Remediation Protocol[1].

3.0 Project Objectives

The following objectives have been identified for the Radio Island Remediation Project:

- To minimize environmental impacts to humans and wildlife at the site;
- To ensure the project is completed complying with all legal obligations;
- To ensure the project is undertaken in accordance with all Federal and/or Departmental policies;
- To increase public perception and attitude toward remediation activities;
- To enhance the skills of the local labour force; and
- To reduce liabilities to the Crown.

The objectives of this year's work program include:

- Review all previous information gathered for the site regarding on-site landfills, contaminated soils, and hazardous materials;
- Conduct detailed site assessment activities to:
  - Delineate and quantify the volume of contaminated soil at the site. This will include soil contaminated with heavy metals, PCBs, and petroleum hydrocarbons.

[1] Indian and Northern Affairs Canada, Abandoned Military Sites Remediation Protocol - March, 2005

- Quantify the volume of hazardous materials at the site, including asbestos containing materials and paint containing PCBs and/or lead.
- Quantify the volume of non-hazardous materials at the site, including wood, metal and concrete waste.
- Quantify the volume of liquid waste that can be incinerated on-site (hydrocarbons) or requires southern disposal (PCB-containing oil, chlorinated or metal-containing hydrocarbons).
- Identify borrow sources to supply enough granular material for the construction of the landfill by way of a full geotechnical evaluation.
- Identify potential locations for an engineered landfill for the disposal of hazardous and/or non-hazardous waste.
- Identify any contamination that may be present in nearby water bodies as a result of previous disposal practices through fish harvesting and sediment sampling.
- Evaluate the condition of the access roads and the air strip at the site.

- Complete a detailed site survey showing the locations of the infrastructure, contaminated soil, debris areas, borrow sources, and potential landfill locations.
- Enhance opportunities for community and Inuit involvement through community consultations;
- Prepare a work plan and detailed design for recommended site restoration and closure activities; and
- Complete an Archaeological Assessment.

4.0 Project Scope

- Regulatory Approvals
- Consultation
- Site Assessment
- Site Remediation
- Monitoring
- Program Management

5.0 Project Plan

5.1 Care & Maintenance

n/a

5.2 Regulatory Approvals

5.2.1 Obtain Archaeological Assessment Permit

Complete and submit the Nunavut Archaeological Assessment application (remediation phase).

Status: March, 2006

5.2.2 Obtain Nunavut Water Board License

Complete and submit the Nunavut Water Board application (remediation phase).

Status: March thru May, 2006

5.2.3 Obtain INAC Land Use Permit

Complete and submit the Land Use Permit application (remediation phase)

Status: March thru May, 2006

5.2.4 Complete NIRB/CEAA Screening

Complete and submit the NIRB/CEAA application (remediation phase)

Status: March thru May, 2006

5.3 Consultations

5.3.1 RAP Community Consultations

Consultations will be carried out by INAC/PWGSC in Igloolik and Hall Beach - the nearest communities to Bray Island. Input into the development of the Remedial Action Plan and future contracting possibilities will be discussed.

Status: February, 2007

5.4 Site Investigations & Assessment

5.4.1 Complete a Phase III ESA

Complete a Phase III Environmental Site Assessment including; complete soil delineation, materials audit and geotechnical investigation. This includes calculating soil, hazardous waste and non-hazardous waste volumes.

Status: August, 2006

5.4.2 Complete an Archaeological Assessment

Complete an Archaeological Assessment as per Government of Nunavut requirements.

Status: August, 2006

5.4.3 Additional Reporting

Complete the Environmental Screening and Human Health & Ecological Risk Assessment.

Status: pending 5.4.1 - December, 2006

5.5 Site Remediation

5.5.1 Prepare Remedial Action Plan

Review and finalize Remedial Action Plan including updating drawings and completing a GAP review. Comments from community representatives will be incorporated, when applicable. into the draft Remedial Action Plan.

Status: pending 5.4.1- March, 2007

5.6 Monitoring

n/a

5.7 Project Management

5.7.1 Complete Detailed Work Plan

Ensure draft Work Plan is complete, updated and distributed to Project Management Team and Headquarters for November, 2005 and final budget in February, 2006.
Status: November, 2005 and February, 2006

5.7.2 Complete Detailed Budget

Ensure preliminary budget is complete, updated and distributed to Project Management Team and Headquarters for November, 2005 and final budget in February, 2006
Status: November, 2005 and February, 2006

5.7.3 Completed Detailed Schedule

Ensure Schedule is complete, updated and distributed to Project Management Team and Headquarters.
Status: November, 2005 and February, 2006

6.0 Project Team

The Project Manager will be Lou Spagnuolo from Indian and Northern Affairs Canada, Nunavut Regional Office.

The project team is made up of INAC Nunavut-based personnel, utilizing the expertise of PWGSC for project management, site assessment, engineering and remedial design experience and services. The organizational structure of the project has taken into consideration the current in-house capabilities of the INAC Nunavut project office, department staffing and federal policy of utilizing PWGSC for project management services in the case of contracts over $2 million.

The organizational structure and responsibilities are outlined in Appendix A.

7.0 Project Delivery Strategy

Environment, Health and Safety

INAC has developed an Environmental, Health and Safety Management System (EHS MS) policy manual to ISO 14001 and 18001 standards and in accordance with the governing legislation. This policy manual defines roles and responsibilities of all stakeholders and will be used by PWGSC to develop a project specific Safety Management System.

In accordance with PWGSC procedures, the Site Services Consultant will be named the "Prime Contractor" as defined by the legislation and will be responsible for all on site Health and Safety compliance.

EHS targets are in the process of being established and will be used as key performance indicators for managing the program.

Community Relations

Throughout the assessment and consultation process, the project will develop a very strong working relationship with the various Inuit groups, which the project wants to preserve on a long-term basis. Contract tenders will have a requirement for maximizing the involvement of local people.

Design Strategy

This will be finalized with the development of the final Remedial Action Plan for the site.

Procurement & Logistics Strategy

In general, permanent materials and temporary equipment required for the remediation activities will be contractor supplied. Any additional equipment or materials will be purchased through PWGSC or INAC utilizing their policies and systems.

The air charters will be arranged with use of the National Master Standing Offers that currently exist.

All equipment, including emergency provisions and personnel logistics will be the responsibility of PWGSC and the air charter company.

Construction Management Strategy

The recommended procurement strategy is as follows:

Stage	Recommended Contract Strategy
1. Project Management Support Services and Construction	INAC contracts with PWGSC through an SSA for Project specific requirements
2. Other Contracting Requirements	INAC contracts through Corporate Services and/or PWGSC (subject to $ value) with one or more Contractors/Consultants
3. Consultation	INAC contracts directly with selected suppliers

Commissioning Strategy

To be revised following the completion of the Remedial Action Plan.

Project Close Out

A central project file has been set up in the INAC Nunavut office to store all documentation, certificates, reports, etc. Electronic information will be stored on the Region's managed e-data storage units (CIDM).

PWGSC contracting services will be responsible for closing out contracts and returning holdback monies and bonds. All holdbacks in association with the Minimum Inuit Employment Content clause will be calculated based on performance indicators collected over the life of the project.

Site equipment and facilities owned by INAC will be de-mobilized from the site and either sold, assigned to other projects or donated to the communities. Any buildings remaining onsite following the completion of the remediation work will be transferred to the proper authority.

A 25-year Long-Term Monitoring Plan will be developed and adopted, in accordance with the INAC Abandoned Military Sites Remediation protocol.

8.0 Project controls

Philosophy

The basic control philosophy is to rely on the services of PWGSC for the provision of the control systems and the day-to-day management of the work packages. INAC will retain overall directional control of the project and set the key performance indicators for EHS, scope, cost, schedule and quality control. INAC will be assisted in this area by independent advisors with expertise in the areas of project management, environmental and technical.

Monthly meetings will be held with PWGSC to review and approve scope changes, budget transfers within the project, contingency allocation, progress payments, cost forecasts and schedule changes.

Scope management – Changes in the scope of the project will be prepared by PWGSC and approved by the INAC project manager.

Quality management – Quality control (QC) will be the responsibility of the contractors who will be instructed at the time of tender to retain qualified third party QC firms. PWGSC and/or INAC will provide onsite quality assurance (QA) through visual monitoring and inspection, review of the consultants' QC reports and if necessary requesting independent check tests. Independent verification and validation will be at the discretion of INAC-HQ and will not be a cost to the project.

Cost management – Cost management will be the responsibility of PWGSC, utilizing the cost tracking spreadsheets.

The project work break down structure is based on the standard INAC project categories and budget line items follow this structure. Contracts are made up of work packages, which are assigned budget line items.

Cost control will focus on the commitments and the forecasts to complete the work. PWGSC will present to INAC a monthly cost analysis at the work package level.

All project commitments and change orders must be approved by the INAC project manager. The recommendation will be prepared by PWGSC and will include a comparison of the commitment to the budget. In the event of an emergency, The PWGSC project manager can commit up to $10,000 per item. After approval by the INAC project manager, PWGSC contract services will issue the formal contracts, purchase orders or change orders if they have the authority to do so. In the event commitments include a growth factor, PWGSC will be responsible for managing and reporting available surplus growth funds.

Budget transfers within line items of the project budget will be prepared by PWGSC and approved by the INAC project manager. Direct cost and unit estimates include an unallocated 25% for scope creep, escalation and allowances to complete scope of work as defined.

PWGSC contract services will make all payments on approved invoices. PWGSC will approve all contractor invoices and present to the INAC project manager a summary of intended payments for approval of fund transfer between INAC and PWGSC. Project variance analysis will be subtotaled before considering contingencies.

Contingency – Contingency funds (10% of remediation costs only) are maintained by INAC to cover potential expenditures under the Pre-Approved Amounts for Anticipated Amendments (PAAA) that covers new scope items, and risk management items identified.

Time management – A project schedule will be developed by PWGSC that will reflect the project milestones contained in this plan. The project schedule will be updated and reviewed monthly. Progress will be reported against an earned value system comparing estimated versus actual quantities.

Reporting – PWGSC will prepare by no later than the 15th day of the following month, a report utilizing this work plan as a basis for the structure and any key performance indicators established for the project. Community involvement in the project will be quantified such as training hours, Inuit employment and local business involvement.

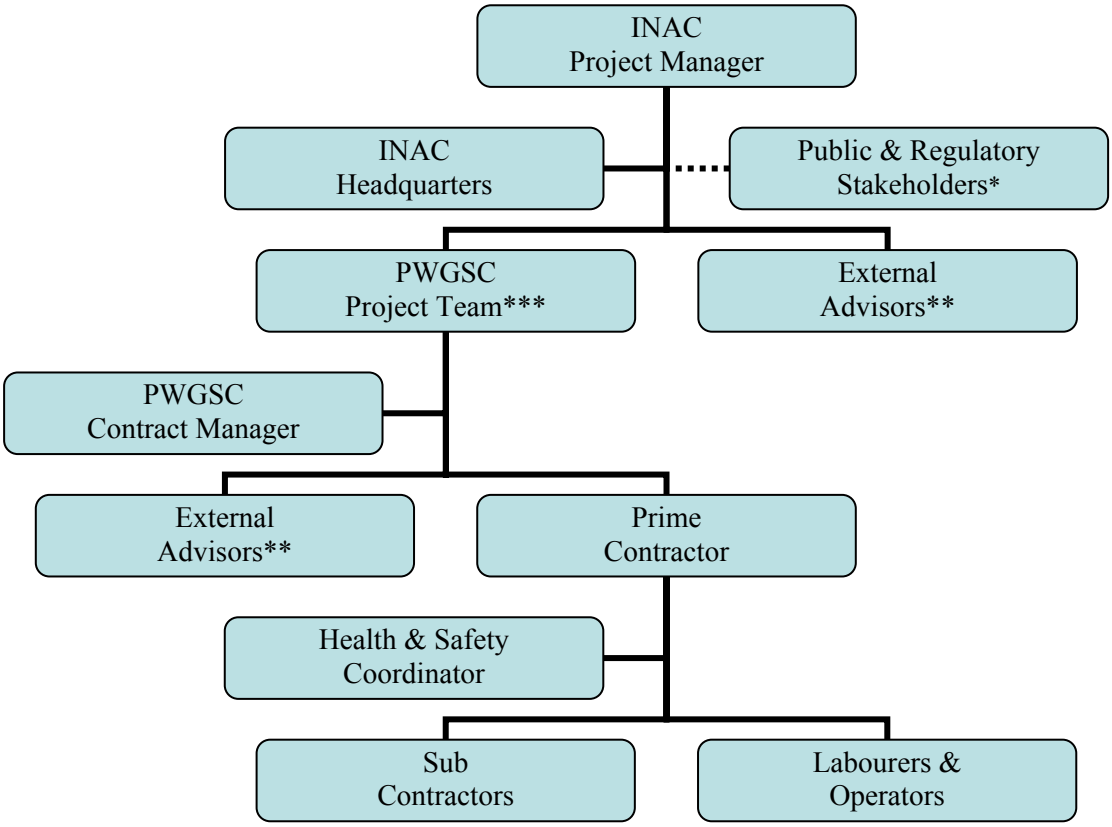
Communications - Project coordination between INAC and PWGSC will be crucial to the success of this project. Roles and communications as per Appendix A and B will be maintained.

9.0 Schedule

The FOX-A (Bray Island) milestones are listed below; a more detailed schedule is shown in Appendix C.

- Submit Archaeological Assessment permit applications – March, 2006
- Finalize assessment work plan and Terms of Reference – May, 2006
- Obtain all necessary permits for site assessment – May, 2006
- Obtain contracts (through existing Standing Offers) – June, 2006
- Site Assessment – August, 2006
- Environmental Screening Report & HHERA– December, 2006
- Community Consultations for draft Remedial Action Plan – February, 2007
- Final Remedial Action Plan– March, 2007

APPENDIX A:
Organizational Structure, Roles & Responsibilities



***Public & Regulatory Stakeholders**

-Hamlets
-Hunter's & Trappers Association
-Regional Inuit Associations
-Environment Canada
-Fisheries and Oceans Canada
-Indian & Northern Affairs Canada
-Transport Canada
-Government of Nunavut
-Nunavut Tunngavik incorporated
-Nunavut Impact Review Board
-Nunavut Water Board
-Nunavut Planning Commission
-Nunavut Research Institute
-Other

****External Advisors**

-Geo-technical Engineering Consulting Firms
-Environmental Engineering Consulting Firms
-Scientific Research Educational Institutions
-Other

***** PWGSC Project Team**

-Project Manager
-Project Officer (if applicable)

INAC Project Manager Roles & Responsibilities

Administration
- Develop annual project objectives
- Oversee implementation of project scope, including scope changes
- Approve the annual plan, budget and schedule
- Apply for funding
- Review and select contractors
- Monitor and report within INAC on project status, including:
  - -Project Planning & Approvals
  - -Liability Reporting
  - -Variance Reporting
- Correct project deficiencies
- Conduct on site inspections for conformance to contract, regulatory and community requirements
- Ensure compliance with EHS plan
- Administer contracts, call-ups, contribution agreements, etc.

Regulatory Affairs
- Lead regulatory strategy and execution, including:
  - -submitting applications
  - -negotiating terms and conditions
  - -reporting
  - -follow-up
- Advise project on compliance requirements

Communications and Consultation
- Execute and lead community liaison strategy
- Internal briefings
- Media contact
- Develop press releases, newsletters, webpages, etc

Finance
- Variance reporting
- Payment of Invoices

PWGSC Roles & Responsibilities

Project Manager
- Prepare and execute annual work plans, schedule and cost estimates
- Implement project workplan
- Forecast and schedule costs
- Prepare or support development of regulatory applications
- Support and assist implementation of community consultation strategy
- Support development and implementation of management systems to meet regulatory requirements
- Information collection and client reporting
- PWGSC Contracting services liaison
- Financial administration
- Monitor scope change requests, approve changes up to $25k
- Contractor claims negotiations
- Contract management
- Monitor and report to INAC on project status

Project Officer
- Site supervision
- Quality control of project technical work
- Site contract administration, monitoring and control
- Ensure regulatory expectations are met
- Conduct on site inspections for conformance to contract, regulatory and community requirements
- Monitor EHS plan implementation with reporting

Contract Manager
- Write and negotiate contracts
- Amend contracts to a maximum regional value of $250K (greater than this requires HQ approval)

APPENDIX B:
Administrative Reporting

PWGSC will support INAC as follows:

Routine reports

-Reference Northern Affairs Program Contaminated Sites Corporate Procedures
-Weekly: during the field season preparation and participation in weekly verbal 1 hour project status updates focusing on the status of the safety, regulatory compliance, the beneficiaries program and non routine issues.
-Monthly: By the 15 day of the month following PWGSC will provide a monthly report utilizing the work plan as a basis for the report structure and key performance indicators established for the project which includes:

i. detailed account of activities relating to progress to the milestone and deliverables on the project schedule, and plans to correct deficiencies
ii. A detailed account of expenditures committed and spent against the budget, and plans to correct deficiencies highlighting variances of >10% from scheduled expenditures at the time of the report.
iii. A summary of the safety program activities including:
- the number of tool box meetings and weekly safety meetings;
- incidents;
- outstanding issues;
- associated attendance sheets, agendas and minutes; and
- variances, corrective actions, lessons learned.

iv. Benefits to the Northern workforce including
- Number, % and hours of Inuit workforce trained
- Type of training
- Number and % of beneficiaries of the NCLA employed during the month
- Amount and % spent on NCLA suppliers
- Variances, corrective actions, lessons learned

v. A summary of the environmental compliance checks including
- Regulatory expectations
- Site specific environmental issues
- Variances, corrective actions, lessons learned

-Monthly: In the 4th week of the month, preparation and participation in monthly 2 hour status review and continuous improvement meetings, to review and approve scope changes, budget transfers within the project, contingency allocation, progress payments, cost forecasts and schedule changes.
-Quarterly: Preparation and participation in 2 day review and continuous improvement meetings

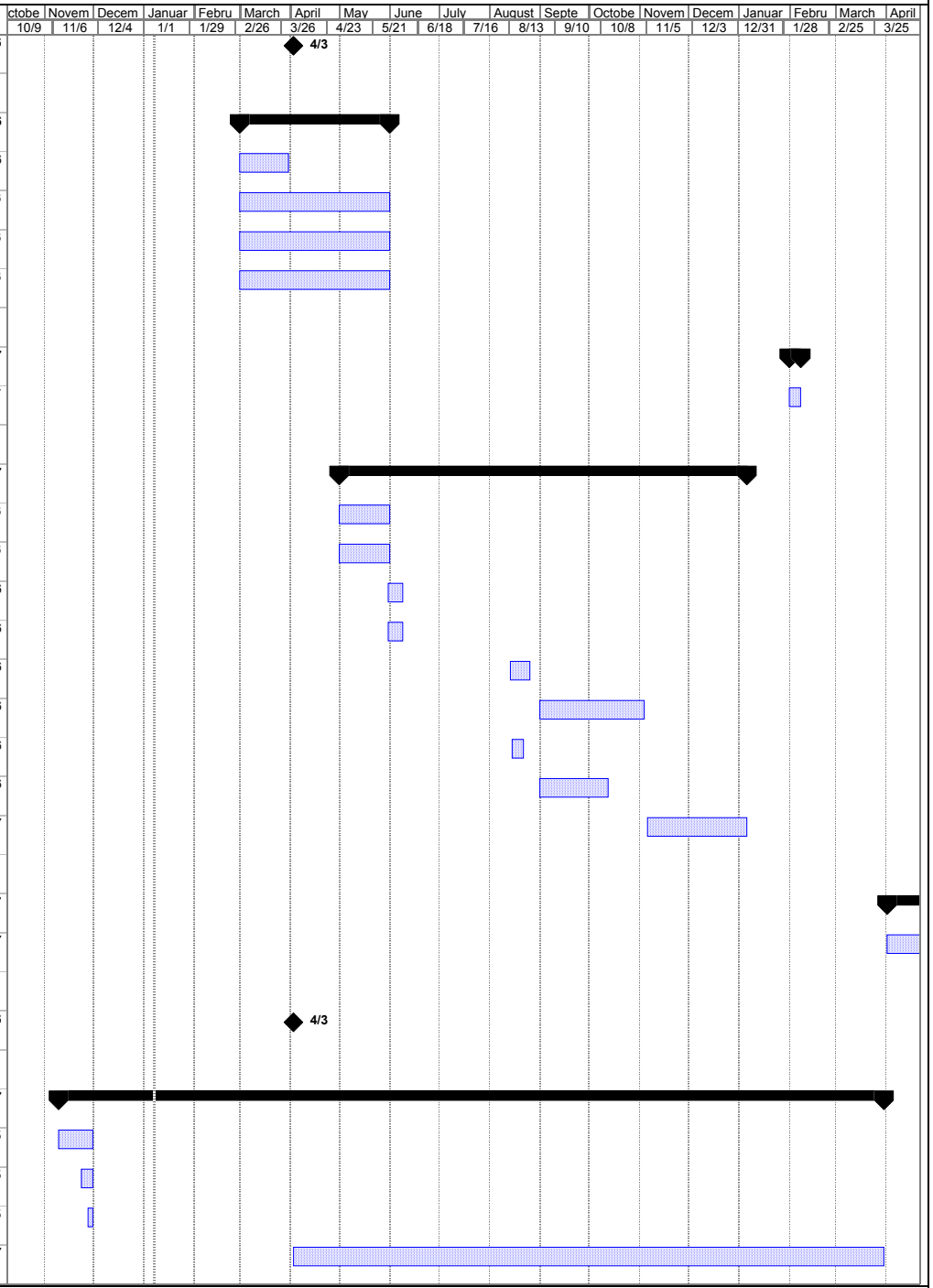
Non routine Reports

-Prior to implementation of any change of scope or increase in expenditures
-Immediately upon discovery of any significant safety issues, loss of property, medical aid, wildlife impact, external public issues.

APPENDIX C:
Project Schedule

Former FOX-A Military Base
Bray Island
2006/07 Program

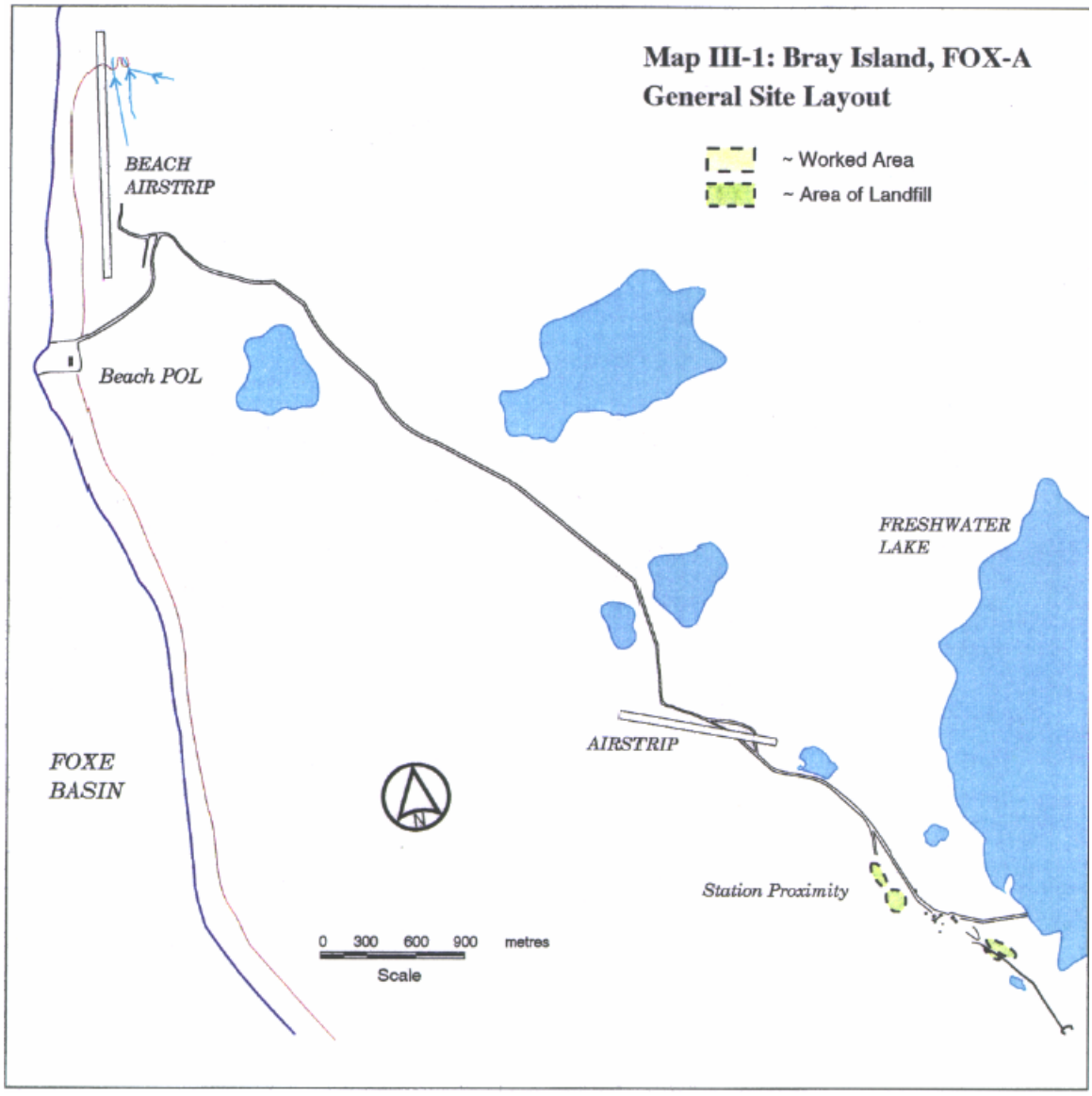
ID	Task Name	Duration	Start	Finish
1	**1 Care and Maintenance**	**0 days**	**Mon 4/3/06**	**Mon 4/3/06**
2				
3	**2 Regulatory Approvals**	**66 days**	**Wed 3/1/06**	**Wed 5/31/06**
4	2.1 Archaeological Permit	22 days	Wed 3/1/06	Thu 3/30/06
5	2.2 Land Use Permit	66 days	Wed 3/1/06	Wed 5/31/06
6	2.3 Water Use Licence	66 days	Wed 3/1/06	Wed 5/31/06
7	2.4 CEAA/NIRB Screening	66 days	Wed 3/1/06	Wed 5/31/06
8				
9	**3 Consultation**	**5 days**	**Thu 2/1/07**	**Wed 2/7/07**
10	3.1 Draft RAP Consultation	5 days	Thu 2/1/07	Wed 2/7/07
11				
12	**4 Site Investigation and Assessment**	**180 days**	**Mon 5/1/06**	**Fri 1/5/07**
13	4.1 Phase III ESA	23 days	Mon 5/1/06	Wed 5/31/06
14	4.1a TOR for Phase III	23 days	Mon 5/1/06	Wed 5/31/06
15	4.1b Obtain Contracts (ESA)	7 days	Wed 5/31/06	Thu 6/8/06
16	4.1c Obtain Contracts (Camp)	7 days	Wed 5/31/06	Thu 6/8/06
17	4.1d Phase III ESA	10 days	Mon 8/14/06	Fri 8/25/06
18	4.1e Final Phase III ESA Reports	46 days	Fri 9/1/06	Fri 11/3/06
19	4.2 Archaeological Assessment	5 days	Tue 8/15/06	Mon 8/21/06
20	4.2a Archaeological Assessment Reports	30 days	Fri 9/1/06	Thu 10/12/06
21	4.3 Environmental Screening & HHERA Report	45 days	Mon 11/6/06	Fri 1/5/07
22				
23	**5 Site Remediation - No planned activities in 2005-06**	**21 days**	**Mon 4/2/07**	**Mon 4/30/07**
24	5.1 Remedial Action Plan	21 days	Mon 4/2/07	Mon 4/30/07
25				
26	**6 Monitoring Activities**	**0 days**	**Mon 4/3/06**	**Mon 4/3/06**
27				
28	**7 Project Management**	**362 days**	**Thu 11/10/05**	**Fri 3/30/07**
29	Complete Detailed Work Plan	15 days	Thu 11/10/05	Wed 11/30/05
30	Complete Detailed Budget	5 days	Thu 11/24/05	Wed 11/30/05
31	Complete Detailed Schedule	3 days	Mon 11/28/05	Wed 11/30/05
32	Ongoing Project Management	260 days	Mon 4/3/06	Fri 3/30/07



APPENDIX D:
List of Relevant Reports

Title	Author	Date
Ecological Risk Evaluation for FOX-A Bray Island: Level 1 Custodial Input Section	SENES	Nov-03
Human Health Screening Level Risk Assessment for FOX-A Bray Island	SENES	Nov-03
Engineering Design (95% submission) & Cost Estimate - Revision 1	QC/Sinanni	Oct-01
FOX-A Bray Island 2001 Project Drawings	QC/Sinanni	Oct-01
Intermediate Site Risk Assessment - Volume 1	Gartner Lee	Jun-98
Intermediate Site Risk Assessment - Volume 2	Gartner Lee	Jun-98
Environmental Study - Six Intermediate Sites in the Eastern Arctic: Vol. 1	ESG	Mar-94
Environmental Study - Six Intermediate Sites in the Eastern Arctic: Vol. 2	ESG	Mar-94
Environmental Study - Six Intermediate Sites in the Eastern Arctic: Vol. 3	ESG	Mar-94

APPENDIX E:
FOX-A (Bray Island) Site Layout


Map III-1: Bray Island, FOX-A
General Site Layout
~ Worked Area
~ Area of Landfill
BEACH AIRSTRIP
Beach POL
FRESHWATER LAKE
AIRSTRIP
FOXE BASIN
Station Proximity
0 300 600 900 metres
Scale