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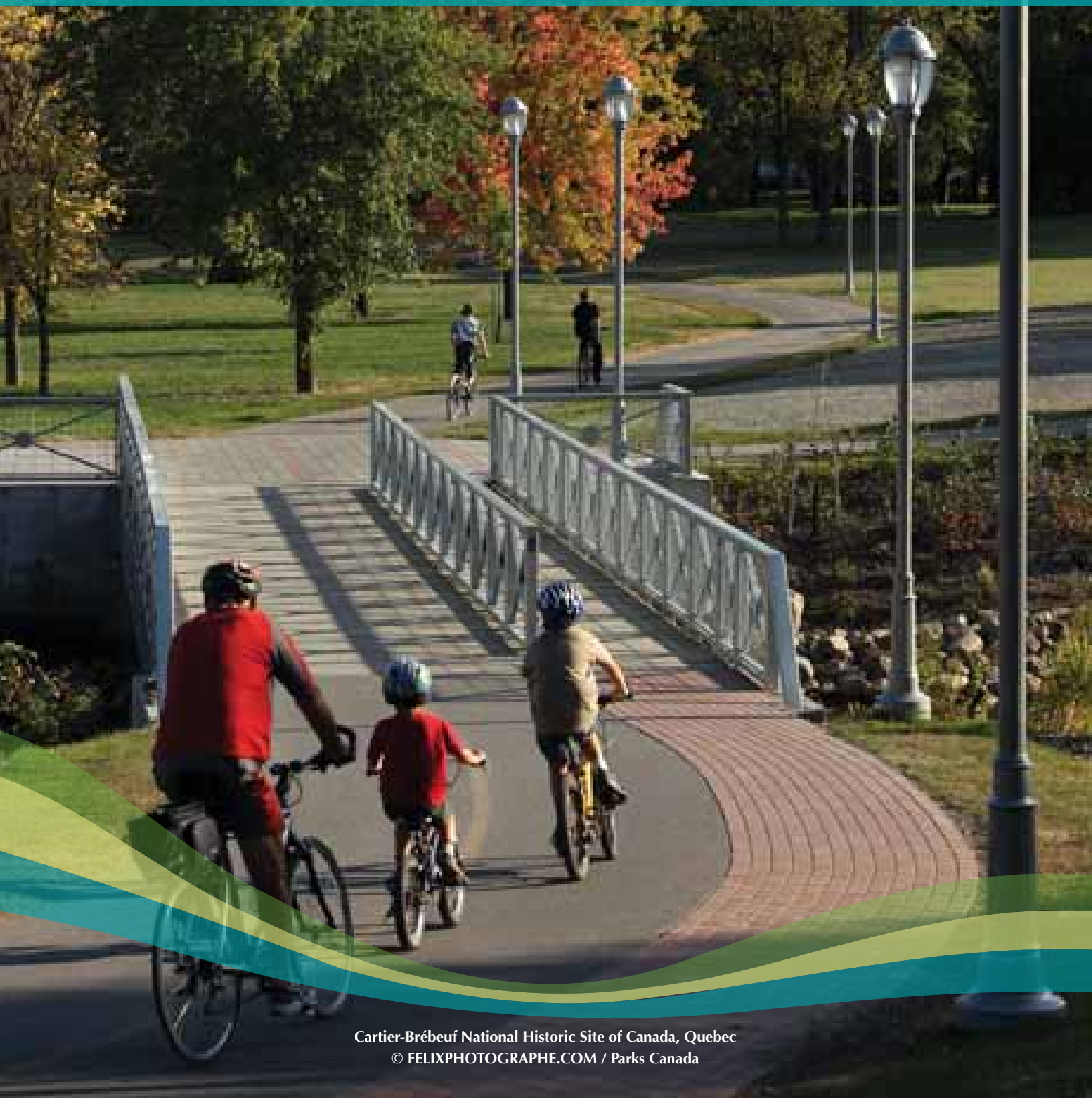
Canada

Federal Contaminated Sites Action Plan (FCSAP)

REPORT FOR CANADA'S ECONOMIC ACTION PLAN YEARS (2009–2011)



Cartier-Brébeuf National Historic Site of Canada, Quebec

Faro Mine, Yukon
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Federal Contaminated Sites Action Plan Report for Canada's Economic Action Plan Years (2009–2011)

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Environment Canada Environnement Canada

CASE STUDY

PARKS CANADA: REHABILITATION OF A HISTORIC SITE

Cartier-Brébeuf National Historic Site of Canada, Québec City, Quebec

THE SITE – Created in 1972, the Cartier-Brébeuf National Historic Site of Canada (CBNHSC) commemorates Jacques Cartier's first winter in North America, as well as the establishment of the first Jesuit residence in Québec City by Father Jean de Brébeuf. The 6.8-hectare park has an interpretation centre, green space and a water basin that shows how the canalized Lairet River merges with the Saint-Charles River. The contamination on this site is divided into western, eastern and northeastern sectors.

THE CHALLENGE – Before CBNHSC was created, the site was used as a backfill zone and dumping ground. The soil was contaminated with various products, including metals, sulphur, polycyclic aromatic hydrocarbons (PAHs) and other petroleum products. A steel pipe installed by the City of Québec in 1970 to canalize the Lairet River needed to be replaced because it posed dangers for visitors and a risk of flooding. The Lairet River needed to be revitalized, as the method for replacing the steel pipe involved discharging the water by recreating the original path of the river.

THE SOLUTION – Parks Canada conducted environmental site assessments that included an analysis of ecological and human-health risks and evaluations of the environment. In 2008–2009, it produced a risk assessment action plan and proceeded with cleaning up the site by excavating and disposing of more than 4,700 tonnes of contaminated soil at approved facilities.

The first phase of the revitalization of the Lairet River, completed in 2008–2009, focused on the western sector. The steel pipe was replaced and the former riverbed was reshaped to its original course.

The second phase, completed in 2009–2010, focused on the eastern sector. A risk-management strategy was developed and the site was partially cleaned up by excavating and disposing of approximately 200 m^3 of contaminated soil. The site was eventually landscaped with a bicycle path and a pedestrian path along the Lairet River.

THE BENEFITS – The revitalization of the Lairet River at CBNHSC provides a safer and more user-friendly site for visitors. With the removal of contaminated soil and the revival of the aquatic ecosystem, wildlife such as carp, the great blue heron, the American black duck, the mallard and the double-crested cormorant have returned to the area, making this project another environmental success.

EXECUTIVE SUMMARY

Established by the Government of Canada in 2005, the Federal Contaminated Sites Action Plan (FCSAP) is a 15-year program with funding of $3.5 billion. Its primary objective is to reduce environmental and human-health risks from federal contaminated sites and to reduce federal financial liabilities related to these risks.

In Phase I of FCSAP (2005–2011), the federal departments, agencies and consolidated Crown corporations responsible for contaminated sites (referred to as custodians) conducted remediation activities at 1,400 sites and completed remediation at 650 sites. Assessments were conducted at more than 9,400 sites and completed at 6,400 sites. FCSAP expenditures and the associated custodian cost-share for this work was $1.6 billion. This report describes the progress in the final two years of Phase I (2009–2011).

In January 2009, the Government of Canada launched Canada's Economic Action Plan (CEAP) to stimulate Canada's economy while encouraging long-term growth and fiscal sustainability. Through CEAP, the federal government allocated an additional $245.5 million from 2009–2011 to accelerate the assessment and remediation of federal contaminated sites.

Total expenditures of $734 million were reported nationally by 18 custodial departments from 2009–2011, accounting for 46% of the $1.6 billion spent under FCSAP since 2005–2006. The following results were achieved in these two years:

- Assessments were conducted at approximately 5,000 sites to characterize environmental conditions; about 25% of sites that were fully assessed required remediation or risk management, while 75% of the sites required no further action.
- Remediation and risk-management activities were conducted at approximately 880 sites; at 240 of these, the remediation process was completed, resulting in improvements in environmental quality.
- Approximately 5,700 person-year jobs were created, with an estimated 8.4 jobs created for every million dollars spent on FCSAP projects.

These results are reflected in the Federal Contaminated Sites Inventory (FCSI), which, at the end of 2011, listed approximately 22,000 sites. A comparison of FCSI data from 2008–2009 with data from the CEAP years showed that custodians are assessing and closing more sites. During the two CEAP years, the number of sites suspected of being contaminated decreased by 36% compared to 2008–2009. There was a 30% increase in the number of sites in the assessment phase, and a 28% increase in sites in the remediation phase. There was also a 94% increase (from 4,192 to 8,122) in the number of closed sites, where no further action was required. This progress was a result of the increased FCSAP funding available during the CEAP years, which allowed custodians to conduct more assessment and remediation work at their sites. The majority (87%) of expenditures during these two years was attributed to FCSAP.

Adjusted liability, an estimate of the liability for sites eligible for FCSAP funding, increased by $500 million, to $2.943 billion during the CEAP years. This increase in federal environmental liability is attributed to the increased assessment activities that were completed on contaminated sites. Continued work on FCSAP projects will further refine liability estimates; total liability is expected to decline as fewer new sites are added to the federal inventory and more existing sites are remediated.

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TABLE OF CONTENTS

DYE-M Cape Dyer DEW Line, Nunavut
Personal archives of David Eagles,
Department of National Defence

ABBREVIATIONS AND ACRONYMS

AAFC	Agriculture and Agri-Food Canada
AANDC	Aboriginal Affairs and Northern Development Canada
ADM	Assistant Deputy Minister
CBSA	Canada Border Services Agency
CCME	Canadian Council of Ministers of the Environment
CEAP	Canada's Economic Action Plan
CSC	Correctional Service of Canada
CSMWG	Contaminated Sites Management Working Group
DEW	Distant early warning
DFO	Fisheries and Oceans Canada
DG	Director General
DND	Department of National Defence
EC	Environment Canada
FCSAP	Federal Contaminated Sites Action Plan
FCSI	Federal Contaminated Sites Inventory
HC	Health Canada
HSC	Highest step completed
IRWG	Interdepartmental Regional Working Group
JCCBI	Jacques Cartier and Champlain Bridges Incorporated
LED	Lands and Economic Development
MAI	Marine Atlantic Inc.
NAO	Northern Affairs Organization
NCC	National Capital Commission
NCSCS	National Classification System for Contaminated Sites
NRC	National Research Council
NRCan	Natural Resources Canada
PC	Parks Canada
PCB	Polychlorinated biphenyl
PERC	Percholoroethylene
PWGSC	Public Works and Government Services Canada
RCMP	Royal Canadian Mounted Police
TBS	Treasury Board of Canada Secretariat
TC	Transport Canada

CASE STUDY

FISHERIES AND OCEANS CANADA: LIGHTSTATION REMEDIATION

Panmure Island Lightstation, Kings County, Prince Edward Island

THE SITE – Panmure Island Lightstation is located adjacent to the Northumberland Strait on the eastern shore of Panmure Island in Kings County, Prince Edward Island. The lightstation was built at the site in 1853. A fog horn was added in 1976. The lightstation was automated in 1985. Remnants of a concrete foundation (associated with a former fog alarm building) now serve as a helicopter pad, and a former dump/debris area was previously located on the site. The site is typical of many contaminated sites under the Department of Fisheries and Oceans (DFO), as coastal lightstations have metal contamination resulting from lead-based paint.

THE CHALLENGE – The site was contaminated from using lead-based paint on the exterior of the lighthouse and other site buildings. Over time, the lead-based paint flaked off to the ground and contaminated the soil. The lighthouse was repeatedly scraped and repainted with lead-based paint. Hydrocarbons were also detected in the former dump/debris area, where burning took place.

THE SOLUTION – An environmental consulting firm was retained by Public Works and Government Services Canada on behalf of DFO to perform environmental oversight at the Panmure Island lightstation. Approximately 139 tonnes of metal- and hydrocarbon-impacted soil were excavated and removed.

THE BENEFITS – Excavating and removing the contaminated soil from the site eliminated potential human-health and ecological-health risks.

1 INTRODUCTION

The Federal Contaminated Sites Action Plan (FCSAP) is a $3.5-billion, 15-year program introduced by the Government of Canada in 2005. Its goal is to reduce human-health and environmental risks and financial liabilities from the highest-priority federal contaminated sites. FCSAP costs are shared among federal departments, agencies and consolidated Crown corporations (referred to as custodians). The program provides a consistent approach to deal with contamination from historical federal activities and supports custodians' assessment, remediation and risk-management activities on federal contaminated sites. Before FCSAP, federal departments and agencies spent up to $100 million annually to remediate or manage risks associated with contaminated sites. Since 2005, $1.512 billion in FCSAP funding has been allocated for assessment and remediation activities. A further $145 million has been allocated to support custodians who perform this work on sites under their responsibility.

Environment Canada (EC) provides program administration through the FCSAP Secretariat, with support to custodians from the Treasury Board of Canada Secretariat (TBS). EC, Fisheries and Oceans Canada (DFO), Health Canada (HC) and Public Works and Government Services Canada (PWGSC) provide expert advice and technical assistance to custodians in support of the program. For more information concerning the administration of the FCSAP program, see Appendix A.

FCSAP Goal

Reduce human-health and environmental risks and associated federal financial liabilities at the highest-priority federal contaminated sites.

Types of Funding

FCSAP provides funding for the assessment and remediation of contaminated sites that are under the responsibility of federal departments, agencies or consolidated Crown corporations.

FCSAP funds the remediation of two classes of terrestrial [1] and aquatic [2] sites:

- **Class 1:** high priority for action or action required
- **Class 2:** medium priority for action or action likely required

Contaminated Site

According to the Treasury Board of Canada's Policy on Management of Real Property, a contaminated site is "a site at which substances occur at concentrations that (1) are above background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment; or (2) exceed the levels specified in policies and regulations."

The program provides socio-economic benefits by creating new jobs in the Canadian environmental remediation industry, offering training and employment opportunities for Aboriginal people and those living in rural areas and promoting innovative technologies.

FCSAP projects on federal properties include harbours and ports, military bases, airports, lighthouses, school facilities and fuel storage tanks on reserve land, and abandoned mines.

In January 2009, the Government of Canada launched Canada's Economic Action Plan (CEAP) to stimulate Canada's economy, while encouraging long-term growth and fiscal sustainability. CEAP funding has supported infrastructure projects and other investments that provide short-term and long-term benefits to Canadians.

1. Terrestrial sites are classified using the CCME National Classification System for Contaminated Sites (2008): http://www.ccme.ca/assets/pdf/pn_1403_ncscs_guidance_e.pdf
2. Aquatic sites are classified using the FCSAP Aquatic Sites Classification System (2012). Only available to public by request.

Through CEAP, the federal government allocated an additional $245 million from 2009–2011 to accelerate the assessment and remediation of federal contaminated sites.[3] This increased FCSAP funding by 42% to $355 million for 2009–2010 and by 71% to $427 million for 2010–2011(including the baseline or previously approved amounts), compared to 2008–2009.

CEAP funding enabled custodians to accelerate site management activities such as

- assessing the condition of suspected sites;
- classifying sites according to established criteria;
- developing and implementing a risk-management strategy;
- performing necessary care and maintenance activities;
- developing long-term strategies to remediate contamination; and
- creating and implementing monitoring programs.

[3] This funding is identified as accelerated funding, versus original or baseline funding.

Iqaluit Metal Dump, Nunavut
© Transport Canada

CEAP funding also provided employment opportunities to Canadians working in various sectors, including:

- science professional and environmental companies;
- engineering, construction and drilling companies;
- analytical laboratories;
- transport companies;
- tradespeople and labourers; and
- Aboriginal labourers and students.

Phase I of FCSAP ended March 31, 2011. Phase II runs from 2011–2016. This report describes program results and achievements from 2009–2011. For more information on FCSAP, visit http://www.federalcontaminated-sites.gc.ca.

5 Wing Goose Bay, Newfoundland and Labrador
Personal archives of Corey Cooney,
Department of National Defence

CASE STUDY

TRANSPORT CANADA: PUBLIC PORT FACILITY REMEDIATION

Bushell Public Port, Saskatchewan

THE SITE – The Bushell Public Port opened in 1951 to transport fuel and other supplies to Uranium City, a settlement in northwestern Saskatchewan on the northern shores of Lake Athabasca, near the border of the Northwest Territories.

THE CHALLENGE – Spills from large fuel tanks at the site released Bunker C petroleum hydrocarbons into the upland rock and soil, and into the bay. The site was abandoned in the 1980s; the wharves and fuel dock were removed in 2006. The property continued to be used by residents, as it was the only available barge landing area. The Province of Saskatchewan requested accommodations for residents to continue using the site for barging supplies.

THE SOLUTION – Blasting and excavation of contaminated rock and soil was undertaken and the rock with Bunker C was processed into an aggregate for re-use to chip-seal the local airport runway. The remaining aggregate was transferred to the Saskatchewan Research Council for the Cleanup of Abandoned Northern Sites Program and will be used in the closure of former uranium mines in the area. The uplands portion of the site was remediated to acceptable levels. Contaminated sediments were removed to the extent possible within a silt curtain with an excavator. Detailed risk assessments conducted for the remaining water lot indicated that the risk levels, including fish consumption levels, were acceptable. Prop wash during barging operations significantly disrupts the sediment. However, the events are infrequent and short lived. The risk assessment may need to be revisited if the activity level changes.

THE LIMITATIONS – Arranging a community meeting to share information about the remediation project and the risk-assessment results was challenging because the population of Uranium City, the nearest community to the site, is so small. The site is also remotely located and using traditional forums to disseminate information was not feasible.

THE BENEFITS – With acceptable contaminant levels, environmental and human-health risks were reduced and the area is available for redevelopment.

2 PROGRAM RESULTS (2009–2011)

Additional funding from Canada's Economic Action Plan accelerated progress under FCSAP. This section describes the assessments and actions that reduced risks to human health and the environment. It also describes the impact on liability, and socio economic benefits in Aboriginal communities and in northern or rural areas. The section also describes changes to the status of sites on the Federal Contaminated Sites Inventory (FCSI) in terms of their progress towards closure. [4]

Overview of Program Results

2009–2010

- Assessment activities on 3,060 sites cost $56 million
- Remediation and risk-management activities on 584 sites cost $230 million
- Adjusted liability increased by $350 million compared to 2008–2009

2010–2011

- Assessment activities on 2,702 sites cost $55 million
- Remediation and risk-management activities on 639 sites cost $304 million
- Adjusted liability increased by $155 million compared to 2009–2010

2.1 ASSESSMENT

Environmental site assessments are conducted at sites suspected of being contaminated based on past activities. Results of these assessments confirm whether remediation or risk-management activities are required to reduce the risks. For more information on the federal approach to managing contaminated sites, see Appendix B.

In 2009–2010, site assessment activity on 3,060 sites cost $56 million. In 2010–2011, 2,702 sites were assessed at a cost of $55 million. In comparison, assessing 1,955 sites cost $23 million in 2008–2009. Combining sites where work occurred in both years, a total of 5,032 sites were assessed.

The results of completed assessment activities in each of the two years are shown in Figure 1. About 25% of sites required remediation or risk management, while the other 75% required no further action. These outcomes are consistent with results over the past five years.

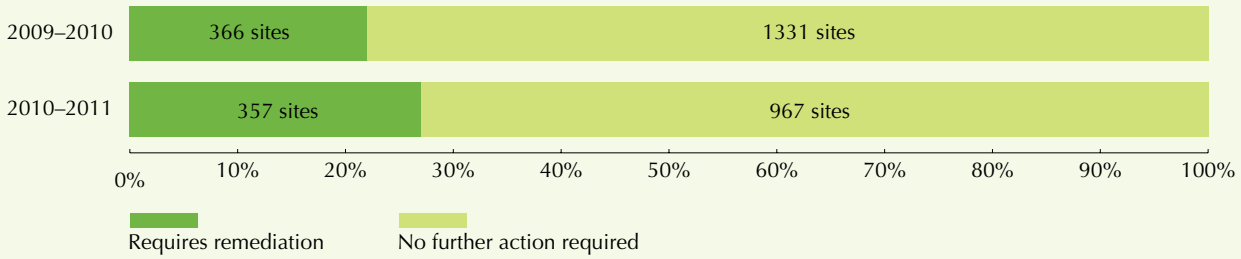
Did You Know?

During the assessment phase, site professionals determine the degree of risk associated with site contaminants. For federal lands, the Canadian Council of Ministers of the Environment (CCME) has published guidelines that pertain to contaminant concentrations in soils, sediments, freshwater and drinking water. [5]

[4] Federal Contaminated Sites Inventory: http://www.tbs-sct.gc.ca/fcsi-rscf/home-accueil-eng.aspx

[5] http://www.ccme.ca/publications

Figure 1: Results of Completed Assessments, 2009–2011



The custodians with the greatest number of sites undergoing assessment activity in 2009–2010 and 2010–2011 (Table C.1 in Appendix C) are DFO and Aboriginal Affairs and Northern Development Canada (AANDC). These custodians have the largest inventory of sites reported in the FCSI.[6] The distribution of assessment activity across Canada by province during the CEAP years, based on expenditures, is shown in Table C.2 in Appendix C. British Columbia and Ontario accounted for 47% ($9–$16 million) of the total expenditures in both years combined.

Colomac Mine, Northwest Territories
© Environment Canada

[6] According to an online search of the FCSI (http://www.tbs-sct.gc.ca/fcsi-rscf/oob-oodg-eng.aspx?clear=1) conducted on August 21, 2012, the five custodians reporting the largest inventory of sites were DFO (10,583 sites), the AANDC South of 60 Program (4,082 sites), National Defence (1,892 sites), Environment Canada (1,256 sites) and the AANDC Northern Affairs Organization (1,021 sites).

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2.2 REDUCTION OF RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

When site-assessment activities are completed, federal custodians may conduct remediation or risk-management activities on their contaminated sites, which may include removal, treatment/reduction or containment to block exposure to the contaminant. The method used to address the contamination at each site depends on its efficacy and cost-effectiveness and the unique circumstances of the contaminated site. For more information, see Appendix B.

The number of sites receiving remediation funding increased from 2009–2010 to 2010-2011. In 2009–2010, remediation work at 584 sites cost $230 million. In 2010–2011, remediation work at 639 sites cost $304 million (see Table C.3 in Appendix C). Annual activity in the two CEAP years reflects an increase from 2008–2009, when remediation on 464 sites totalled $165 million.

What is the Difference between Remediation and Risk Management?

Remediation is the active improvement of a contaminated site to prevent, minimize or mitigate potential damage to human health or the environment. Remediation involves an action plan that may include removing, destroying, treating and/or containing a contaminant to reduce the amount available to receptors.

Risk management consists of implementing a plan to control risk, followed by monitoring and evaluation of the plan's effectiveness. Risk management may include direct remedial action or other strategies that reduce the likelihood, intensity, frequency and/or duration of receptor exposure to contamination. Other strategies may include zoning changes, fencing to prevent entry onto property or other land-use restrictions, as well as communication with affected parties. Monitoring and evaluation may include environmental sampling, post-remedial investigations and analysis of new health-risk information, and ensuring compliance with the risk-management plan.

CASE STUDY

DEPARTMENT OF NATIONAL DEFENCE: REMEDIATION OF A DISTANT EARLY WARNING (DEW) LINE RADAR SITE

Cape Dyer/DYE-Main near Qikiqtarjuaq, Nunavut

THE SITE – DYE-Main is a decommissioned Distant Early Warning (DEW) Line radar site located at Cape Dyer in Nunavut, near Qikiqtarjuaq. An active North Warning System long-range radar site occupies part of the former DEW Line site. This site is one of the 42 Canadian DEW Line sites that stretched across the Arctic as a former military line of defence installed during the Cold War to maintain surveillance of North American airspace. The site operated until 1989, when it was replaced with a North Warning System site that remains active today. Historic use of the site has caused elevated background soil concentrations for several contaminants.

THE CHALLENGE – This site is characteristic of DEW Line sites across the Arctic. Access to the sites is extremely difficult due to their remote locations and extreme weather conditions. DYE-Main became contaminated with a variety of heavy metals, chemicals and hydrocarbon products due to accepted disposal practices at the time of operation. As part of the clean-up project, it was necessary to first demolish the structures, then remediate and manage environmental contamination under stringent clean-up standards. The standards were developed specifically for the Arctic environment, in agreement with the Inuit and the Inuvialuit.

THE SOLUTION – A specific DEW Line Clean-up criteria was created and is currently being followed to ensure the sites are remediated to the standards agreed upon by all stakeholders.

The remediation activities dictated by the criteria involve classifying waste into low, moderate or highly contaminated categories and removing only the highly contaminated waste from the sites. The waste not removed stays on-site in appropriate landfills for the level of waste classification. The highly contaminated waste is shipped to southern Canada to be disposed of or destroyed in an environmentally friendly manner. The project is currently in the remediation phase of the clean-up operation. Remediation work is expected to be completed in September 2013.

THE LIMITATIONS – The project faced a setback in 2008 when federal regulations related to polychlorinated biphenyl (PCB) contamination levels were revised. The contractor was unable to complete the clean-up, and a second contract was established to complete the project.

THE BENEFITS – Clean-up activities on site have created jobs and stimulated the local economy.

- **Job creation during the project:** After moving all necessary equipment to the site in 2004, the initial contract averaged about 7,000 person-days of employment each year for five years (2005–2009), including 3,100 person-days for local Inuit.

  In June 2010, a military operation performed preventive maintenance while the contract was tendered. Eight Canadian Rangers from nearby communities supported the military engineers from New Brunswick. A contract for care and maintenance of the site was awarded to an Inuit-owned company for part of 2010 and 2011. The company employed 15 people during the construction season, with seven of the jobs created filled by local residents. The second and final construction contract was awarded to an Inuit-owned company in 2011, and 73% of the jobs on site the first year were performed by Inuit.

- **Future job creation:** Experience gained while working on the site may lead to future employment with other remediation projects or mining projects in the North.

- **Economic stimulus:** This project will provide local and regional economic stimulus to the Canadian North.

Personal archives of David Eagles, Department of National Defence

The custodians with the greatest number of sites undergoing remediation activity in 2009–2010 and 2010–2011 (see Table C.3 in Appendix C) were DFO, the Department of National Defence (DND) and the Lands and Economic Development Program of AANDC. Although its activities focused on fewer sites, the Northern Affairs Organization of AANDC spent twice as much on remediation activities in both CEAP years than any other custodian, accounting for about 40% of total FCSAP remediation expenditures. The majority of this work occurred at Giant Mine ($56 million) and Faro Mine ($48 million). These high costs reflect the significant amount of contamination at these sites, their impact and the challenges of working in the North. For a complete list of sites that received FCSAP remediation funding, see Table C.8 in Appendix C.

Table C.4 in Appendix C shows the distribution of remediation activity across Canada over the two CEAP years. The greatest expenditures were in Nunavut and the Northwest Territories ($60–$70 million) in both years, accounting for approximately 50% of the total remediation expenditures.

There was a significant increase in the number of sites that completed remediation/risk-management plans and implemented risk-reduction projects from the first year of CEAP to the second (see Table 1). When risk-reduction plans are completed, sites must undergo confirmatory sampling to ensure that remediation goals have been achieved.

Table 1: Highest Step Completed (HSC) at FCSAP-funded Remediation Sites, 2009–2011

Status	No. of sites in 2009–2010	No. of sites in 2010–2011
Remediation/Risk-management plan being developed (< Step 7)	94	100
R/RM plan developed (Step 7)	263	312
R/RM plan implemented (risk reduced) (Step 8)	103	134
Confirmatory sampling completed (site closed) (Step 9)	119	92
Long-term monitoring completed (site closed) (Step 10)	5	1
Total	**584**	**639**

Shamattawa Remediation Project, Manitoba
© Aboriginal Affairs and Northern Development Canada

CASE STUDY

ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA: SOIL REMEDIATION ON A FIRST NATION RESERVE

Shamattawa, Manitoba

THE SITE – Shamattawa Reserve No. 1 is located approximately 365 air kilometres east of the City of Thompson in Northern Manitoba. The Shamattawa Soil Remediation project consists of three sites:

1. Abraham Beardy Memorial School;
2. Former Anderson Gas Bar; and
3. Decommissioned Manitoba Hydro Diesel Generating Station.

All three sites handled and stored petroleum hydrocarbon products in the form of diesel fuel, while the Former Anderson Gas Bar also handled gasoline. Contamination resulted from improper fuel handling, accidental damage to the system components and inadequate maintenance of the fuel-tank systems. Assessment of the sites identified a combined total 45,830 m^3 of petroleum hydrocarbon-contaminated soil.

THE CHALLENGE – The community of Shamattawa is remote and only accessible by air and winter road, with limited equipment and capacity to complete remediation projects.

The sites were centrally located in the community, potentially presenting a significant health and safety risk for the community's residents, through the exposure to contaminants from the soil and air.

The combination of sandy soil and large fluctuations in the groundwater provided challenges to construction projects as well. Infiltration during construction in the summer months was a concern, as it would impede soil removal and slope stability could be compromised. Further challenges included the depth of the excavation (in excess of 7.5 m, in some areas), the close proximity of residences and the underlying water and sewer infrastructure. Establishing a safe slope ratio at the sites in the summer months would have required extensive relocation of services and buildings.

Finally, many contaminated sites on First Nations lands have been abandoned and, in many cases, it is hard to determine responsibility and even harder to assign remediation costs. As well, two of the sites, the Former Anderson Gas Bar Site and the Decommissioned Manitoba Hydro Diesel Generating Station, were co-located with a degree of the contaminant plumes overlapping making it difficult to determine the source of the contamination.

THE SOLUTION – A partnership approach was proposed to complete the remediation project. A project team was formed with the First Nation, AANDC and an engineering consultant to guide the project in a timely manner and to minimize costs. The work was completed during the winter months to reduce groundwater infiltration and minimize slope instability. AANDC also worked with Manitoba Hydro to establish an agreement to clean up the Decommissioned Manitoba Hydro Diesel Generating Station.

This partnership approach resulted in the contamination being removed from the sites in one construction season, thereby reducing the risk to the community. Furthermore, the project was able to capitalize on cost sharing for equipment mobilization and rental and reduce costs for construction activities to remediate the soils. Finally, Manitoba Hydro covered costs during the early stages of the project, allowing the project to start on time.

Currently, remediation activities for all three sites are almost complete, with a completion report expected at the end of 2012–2013.

THE BENEFITS – The remediation will provide a clean living environment for the residents of Shamattawa and allow opportunities for business development and residential expansion for its members. Manitoba Hydro's involvement meant funds could be used for other environmental site assessment and remediation work. Other valuable benefits include

- local employment;
- equipment acquisition;
- skills transfer; and
- road upgrades.

2.3 LIABILITY REDUCTION

A liability for the cost of remediation or risk management of a contaminated site exists when the Government of Canada is obligated, or is likely obligated, to incur these costs. Liabilities are recorded annually in the Public Accounts of Canada.[7] For additional background information on federal contaminated sites environmental liability, see Appendix D.

A portion of the total liability for the remediation of federal contaminated sites is attributed to sites that are funded by FCSAP. Some consolidated Crown corporations and other entities that report liabilities to the Public Accounts have contaminated sites that are ineligible to receive FCSAP funding, or that do not participate in FCSAP. Some exceptional sites, such as the Sydney Tar Ponds and the Low Level Radioactive Waste sites, have their own funding sources. To obtain a more accurate estimate of the impact of FCSAP on the liability, an adjusted liability was calculated (see Table D.1 in Appendix D).

The total liability for the remediation of contaminated sites, as reported in Public Accounts, increased over the two CEAP years, from $3.2 billion for 2,000 sites as of March 31, 2009 to $4.3 billion for 2,200 sites as of March 31, 2011. However, the adjusted liability increased by half this amount, or approximately $500 million. Most of this increase occurred in 2009–2010.

[7] Public Accounts of Canada 2009, Volume I (PWGSC 2009), S. 2, p. 2.11.
http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=4438733&Mode=1&Parl=40&Ses=3&Language=E

Farnworth Lake Float Plane Base, Manitoba
© Public Works and Government Services Canada

CASE STUDY

ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA: DECOMMISSIONING OF A FORMER GOLD MINE

Giant Mine, Northwest Territories

THE SITE – Giant Mine was one of Canada's earliest gold mines. From its opening in 1948 to its closure in 1999, the mine played a significant role as a major employer and economic engine for Canada's North.

THE CHALLENGE – There are 237,000 tonnes of toxic arsenic trioxide dust stored underground in 15 chambers. The dust was a by-product of the roasting process used to remove gold from mined rock. Effective, long-term management of this material is AANDC's top priority. There is also a large surface component to the site that includes 95 hectares of tailings ponds, over 100 contaminated buildings and eight open pits.

THE SOLUTION – After extensive technical analysis, community consultation and independent peer review of potential methods to manage the arsenic trioxide, AANDC's Giant Mine Remediation Project Team is pursuing a remediation approach that will freeze the dust in place.

The frozen block method consists of freezing the toxic material and surrounding rock. The solid, impenetrable frozen blocks will contain the arsenic trioxide and isolate it from the environment. The remediation plan also outlines activities to demolish over 100 buildings and facilities, stabilize areas of the underground mine, reduce the risk of the mine flooding and to cover the tailings ponds and other areas that contain materials left over from the mining operations.

The 15 underground chambers containing the arsenic trioxide dust will be frozen using an active freezing system similar to how ice is frozen in indoor rinks. A super-cooled liquid will be circulated through a series of underground pipes to freeze the designated areas around and within each of the chambers. This will create an impenetrable barrier that will prevent water from entering the chambers and arsenic from leaving the chambers.

The freezing will occur in stages over several years to ensure that the chambers and surrounding rock are completely frozen. AANDC will ensure that the site is safely managed after the remediation is complete.

The blocks will be kept frozen by using thermosyphons, which are tall, metal tubular devices that remove heat from the ground. Thermosyphons are self-sustaining, so they do not require an external source of power. Although used in a unique application as a part of the remediation project, thermosyphon technology is commonly used in northern environments to freeze the ground in order to stabilize structures (e.g., buildings and dams).

THE BENEFITS – The frozen block method will protect human health and the environment by isolating toxic materials from the surrounding community and environment. The proposed remediation plan will allow a large portion of the site to be used for other uses, to be determined by the community and local governments.

The increase in liability is largely attributed to AANDC, which reported an increase of $443 million. PWGSC, DFO and EC also contributed to this increase (see Tables D.2 and D.3 in Appendix D).

Despite the overall increase in liability for the remediation of contaminated sites, some custodians reported a decreased liability in one or both years. These included Parks Canada (PC), Transport Canada (TC), DND, Natural Resources Canada (NRCan; excluding the Low Level Radioactive Waste Initiative, which is separate from FCSAP), Correctional Service of Canada (CSC), Canada Border Services Agency (CBSA) and the Royal Canadian Mounted Police (RCMP).

Table D.4 in Appendix D shows the change in total liability for the remediation of contaminated sites over the two CEAP years. Liability is reduced by remediation expenditures at contaminated sites and is increased by sites reporting liability for the first time. Changes in the estimated remediation costs can result in a net increase or a decrease in recorded liability.

Compared to 2008–2009, expenditures that reduced liability increased by 40% in 2009–2010, and by 66% in 2010–2011 due to increased remediation spending at FCSAP funded sites. The increase in FCSAP assessment funding through CEAP resulted in an increase of more than 50% in new liability for sites not previously recorded. The increase in liability for 2009–2010 and 2010–2011 was due to changes in cost estimates for remediation activities of large projects, such as Low Level Radioactive Waste sites, which increased by approximately $760 million (see Table D.1 in Appendix D).

Giant Mine, Northwest Territories

CASE STUDY

FISHERIES AND OCEANS CANADA: LIGHTSTATION REMEDIATION

Swallowtail Lightstation on Grand Manan Island, New Brunswick

THE SITE – The Swallowtail Lightstation is located on Grand Manan Island in the Bay of Fundy in New Brunswick. The site is typical of many contaminated sites for which DFO is responsible, as coastal lightstations have metal contamination resulting from using lead-based paint.

THE CHALLENGE – Many of these lightstations are located in hard-to-access or remote locations, making traditional remediation options — such as the excavation and off site disposal of soil — logistically challenging and financially expensive.

The site assessments performed at the Swallowtail Lightstation identified approximately 2,000 m^3 (see Technical Note 1) of soil having metal concentrations exceeding the Canadian Soil Quality Guidelines. Leachate concentrations were above the levels that would allow the soil to be placed in a landfill. The human-health risk assessment determined that existing lead concentrations were 77 times higher than the target concentrations, below which the site would be safe for current and future land use as a seasonal tourist operation.

THE SOLUTION – In 2008, DFO performed a pilot-scale demonstration of an on-site soil-washing technology at the Swallowtail Lightstation. This patented soil-washing technique uses physical separation techniques to separate fine, contaminated particles from the larger uncontaminated soil particles. The unit used on the site was a scaled-down version of a mobile soil-washing unit, which was airlifted to the site by helicopter.

The mobile soil-washing system processed 1,700 tonnes (see Technical Note 2) of soil. The resulting treated soil had lead concentrations ranging from undetectable to 400 mg/kg (see Technical Note 3), which is well below the target concentration specified by the human-health risk assessment. Approximately 1,615 tonnes of treated soil were deemed to have low enough concentrations to be returned to the excavated areas. Approximately 85 tonnes of soil were placed in one-tonne tote sacks and airlifted off the island for further treatment.

THE BENEFITS – The results of the on-site soil-washing showed that the technology could successfully treat metal-impacted soils at remote locations. Many lessons learned and best practices were compiled on the challenges posed by the site's remote location, weather and equipment transportation.

Technical Notes:

1. The site assessment typically estimates the quantity of contaminated soil in cubic metres (m^3), as it is easier to estimate a volume in the field.

2. The quantity of contaminated soil that is processed is usually measured in tonnes, as the soil has to be weighed before it can be treated.

3. The concentration of contamination in soil is typically shown in milligrams (mg) of contaminant per kilograms (kg) of soil.

2.4 FCSAP SECONDARY BENEFITS

Many FCSAP projects have positive socio-economic impacts, particularly in Aboriginal communities and in northern or rural areas. Through joint ventures established between some custodial departments and local communities, work conducted on FCSAP sites offers opportunities for developing skills, training and employing Canadians. These partnerships also foster a sense of ownership of the project outcomes.

During the two CEAP years, approximately 5,700 person-year jobs[8] were created, with an estimated 8.4 jobs created for every million dollars spent on FCSAP projects. This accounts for more than 40% of the total jobs created since FCSAP began in 2005. These jobs provide income and fuel economic growth. They also require skills and training that can be applied at other, non-federal contaminated sites or other types of projects. Northerners and northern Aboriginal Canadians are employed as welders, heavy-duty mechanics, electricians and millwrights during the remediation of federal contaminated sites.

Through FCSAP, the Canadian remediation industry can provide effective new solutions when cleaning up federal contaminated sites. The program also builds awareness of innovative technologies by sharing success stories within the federal community and private sector through case studies profiled in annual reports and workshops for federal site managers and industry.

2.5 IMPACT OF THE FCSAP ON THE FEDERAL CONTAMINATED SITES INVENTORY

The FCSI includes information on suspected, active and closed federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations. It also includes non-federal contaminated sites for which the Government of Canada has accepted financial responsibility.

FCSAP is the main source of funding for federal contaminated sites management, covering about 80% of FCSI site expenditures. Forty percent of all sites in the FCSI have received some FCSAP funding for assessment or remediation activities.

During the CEAP years, the number of sites in the FCSI increased by 10%, from approximately 20,000 to 22,000 sites. Table C.5 in Appendix C shows a breakdown of these sites from 2005–2006 to 2010–2011, and where they were in terms of the 10-step process for addressing a contaminated site.[9]

Despite the increase in the number of sites in the FCSI, suspected contaminated sites were reduced by 36%, from 10,809 in 2008–2009 to 6,958 in 2010–2011. Sites move from suspected to active once the assessment phase begins. This resulted in an increase of the total sites that were in the active phase (6,937 or 32% in 2010–2011, compared to 5,343 or 26% in 2008–2009).

Active sites are either in the assessment or remediation stage, depending on the highest step completed (HSC). The number of sites in the assessment stage (HSC = 3–6) increased by 30% (4,243 to 5,530) and sites in remediation (HSC = 7 or 8) increased by 28% (1,100 to 1,407) during the CEAP years.

Closed sites require no further action, a conclusion that may be reached at different points in the 10-step process. For example, a suspected site (HSC = 1 or 2) may be closed when a historical review indicates that past

[8] 2008 National Input-Output Multipliers, IOIC 562000 - Waste Management and Remediation Services, Statistics Canada.

[9] A Federal Approach to Contaminated Sites. (Contaminated Sites Management Working Group 2000). http://publications.gc.ca/collections/Collection/EN40-611-2000E.pdf

CASE STUDY

ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA: REMEDIATION OF A FORMER DRY-CLEANING FACILITY

Goodfish Lake, northeast of Edmonton, Alberta

THE SITE – The site is a former dry-cleaning facility on the Whitefish Lake First Nation #128, approximately three hours northeast of Edmonton. After 30 years of operation, dry-cleaning waste containing perchloroethylene (PERC), and petroleum hydrocarbons and metals, had contaminated the soil around the building and the adjacent lagoon from 5 to 15 metres below the surface. Additionally, during operations there was also a large spill of PERC from a valve failure on a storage tank containing PERC. The affected areas were the dry-cleaning plant, the adjacent lagoon and a nearby marsh.

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THE CHALLENGE – The contamination extended under the building, and around and under a wastewater treatment facility, which were all bordering a natural marsh. When the building was decommissioned, the contaminated soil that was under and around the building was excavated. However, the lagoon was only approximately 55 metres from the marsh and the contamination was 5–15 metres deep. The marsh's water levels fluctuated greatly, making it difficult to obtain water and sediment samples from the same locations.

THE SOLUTION – A risk assessment was performed and site-specific target levels (SSTLs) were developed as part of a remediation plan to remove the PERC. The wastewater facility was decommissioned, and future plans will focus on remediating the sediments in the lagoon and the surrounding soils. The proposed approach is to treat the soil, by mixing it to the required depth with a zero-valent iron mixture, which filters out contaminants in groundwater. The remediation plan will also focus on preventing the infiltration of PERC into the adjacent marsh and nearby Goodfish Lake. The site-specific target levels and remediation plans are still under review.

THE BENEFITS – Remediation and long-term monitoring has allowed the plant area to be reused, decreased the risk to human health and created temporary jobs for local residents.

- **Land Use:** Since the dry-cleaning plant site was remediated in 2008–2009, the Whitefish Lake First Nation has used the area as a parking area for large equipment.
- **Decreased Risk to Human Health:** The remediation at the plant site removed the largest source zone of PERC contamination, reducing the risk to the environment and human health. Long-term monitoring showed decreased contamination in the groundwater to the west of the plant site. The remediation at the lagoon site is still in progress. When it is completed, the secondary source zone of contamination will be removed or reduced, decreasing the risk to human health (especially from community drinking water) and the environment.
- **Job Creation:** Members from the local community will be employed to work on the remediation project.

activities would not likely lead to contamination. Sites are usually closed if contaminants are not posing an unacceptable risk. Sites are also closed after remediation or risk-management (HSC = 9 or 10) activities have been conducted and risks are reduced to acceptable levels. Closed sites increased by 94% from 2009–2011, from 4,192 to 8,122.

Resolution Island, Nunavut

Closed Sites: No Further Action Required

The most significant change in the composition of sites on the FCSI between 2009 and 2011 is due to the increased number of sites reported as closed.

CASE STUDY

DEPARTMENT OF NATIONAL DEFENCE: GOOSE BAY REMEDIATION PROJECT

5 Wing Goose Bay, Newfoundland and Labrador

THE SITE – 5 Wing Goose Bay was constructed by the United States Air Force in central Labrador in the 1940s as a refuelling station for Allied aircraft en route to Europe. The wing is approximately 200 km inland from the Labrador coast, at the south-western limit of Hamilton Inlet. Allied operations continued after the Second World War and it wasn't until 1987 that DND took over control of the wing. Although not to the same scale, international training still occurs to this day at 5 Wing Goose Bay.

The site is characterized by major hydrocarbon plumes due to leaking underground and aboveground tanks, leaking or ruptured pipelines and unsound historical management and containment practices. Heavy metals and other chemical contamination such as polychlorinated biphenyl (PCBs) and volatile organic compounds (VOCs) are also present in groundwater, soil and sediment, due to historical waste disposal practices and numerous dumpsites.

THE CHALLENGE – The remediation project must reduce or eliminate the potential risks to human health and the natural environment posed by the legacy contamination resulting from prior activities at 5 Wing Goose Bay. At the operation's peak, the fuel storage capacity exceeded 300 million litres, stored in several different tank farms connected by more than 160 km of underground and aboveground pipelines. Due to its remote location, and less stringent environmental standards at the time, most of the waste materials were disposed of on the property until the 1980s. The waste-disposal activities, along with the release of many contaminants (primarily petroleum hydrocarbons) for more than 60 years, have resulted in numerous environmental issues. Contamination exists in soil, sediment, surface water and groundwater, and in the surrounding environment.

Due to the overall size of 5 Wing Goose Bay and the diversity of the habitat in Labrador, 12 separate habitat types exist on the site. These include various forest types, fens and wetland areas, grassland and open water. 5 Wing Goose Bay is home to a variety of flora and fauna with diverse characteristics that must be considered when planning work.

THE SOLUTION – In accordance with the Canadian Environmental Assessment Act (CEAA), an environmental assessment was undertaken in 2008 and 2009 to assess the overall environmental effects of the project and to identify mitigation measures to avoid any potential adverse effects. A detailed environmental management plan and an environmental protection plan will be prepared for each sub-project, based on the specific conditions of and remedial strategy adopted for each site.

DND is implementing a holistic management approach to develop and implement a comprehensive, multi phase remedial action plan for the various sites. Its objective is to assess and prioritize the contaminated sites at 5 Wing Goose Bay and pursue combined remedial objectives and/or risk-management strategies. Assessment work is essentially complete. Remediation activities have begun at the highest-priority sites and are expected to be completed by 2019–2020.

THE LIMITATIONS – The biggest challenges are the availability of the human resources and contracted services to do the work. Due to the site's remote location and competition from nearby projects, securing resources at specific times may become more challenging, affecting cost and project schedules. Site location also contributes to a shorter work season. The procurement process has also been a challenge due to uncertainty with remediation work compared to more traditional construction-type projects. The risk associated with quantifying contamination and the limited experience in contracting this type of work adds time to the procurement process and puts pressure on the overall project schedule.

THE BENEFITS – The project offers many potential opportunities for a variety of remediation technologies/methodologies, including physical/chemical/biological treatment, solidification and stabilization, soil washing and natural attenuation. The project team's focus is to find new procurement methods to encourage innovation and performance while achieving best value for the Government of Canada in meeting its regulatory and policy obligations.

The project team also promotes open, detailed communication with various stakeholders, such as regulatory agencies, interest groups, industry and the general public, and especially with the Happy Valley-Goose Bay community. Project members attribute their success to putting communication at the forefront of their activities.

3 PROGRAM RESULTS (FCSAP PHASE I: 2005–2011)

In Phase I of FCSAP (2005–2011), federal custodians made significant progress towards assessing and remediating sites. Custodians conducted remediation activities at 1,400 sites and completed remediation at 650 sites. Assessment activities were conducted on more than 9,400 sites and completed on 6,400. FCSAP expenditures plus the associated custodian cost-share to conduct this work totaled $1.6 billion.

An analysis of the FCSI since FCSAP began in 2005 shows that custodians are making significant progress in managing their sites (Figure 2). The number of sites in the inventory grew from 4,341 in 2004–2005 to 22,007 in 2010–2011 as custodians ramped up the examination of past site operations that may have caused contamination. However, $1.6 billion of FCSAP and custodian cost share spending on assessment and remediation activities has reduced the proportion of sites in the early stages of the 10-step process, and the uncertainty about the risks they pose.

Overview of Program Results

Phase I

- The number of sites in the FCSI grew from 4,341(2004–2005) to 22,007 (2010–2011).
- Assessment activities were conducted on more than 9,400 sites and completed on more than 6,400 sites.
- Remediation activities were conducted on more than 1,400 sites and completed on more than 650 sites.
- $1.6 billion of FCSAP funding and custodian cost-share was spent to conduct these assessment and remediation activities.
- The number of closed sites increased by more than tenfold, from 679 in 2004–2005 to 8,122 in 2010–2011.
- The adjusted liability increased by $544 million, from $2.399 billion (2004–2005) to $2.943 billion (2010–2011)

5 Wing Goose Bay, Newfoundland and Labrador

CASE STUDY

PARKS CANADA:
PETROLEUM STORAGE FACILITY REMEDIATION

McNabs Island, Nova Scotia

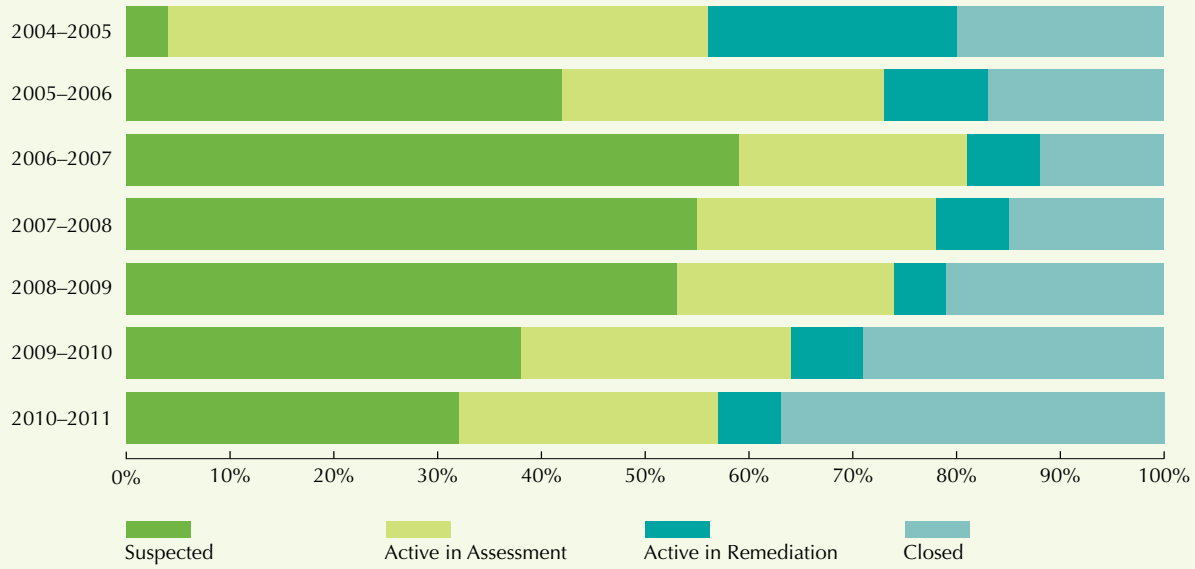
THE SITE – In 1964, Parks Canada acquired McNabs Island in Halifax harbour from DND for the creation of the Halifax Defence Complex National Historic Sites. In 2000, following the determination of boundaries for the Fort McNab National Historic Site and remediation of known areas of contamination, Parks Canada transferred surplus lands to the Province of Nova Scotia for a provincial park. In 2003, the Hurricane Juan storm surge exposed a portion of buried pipeline associated with a petroleum storage facility and a damage-control (firefighting) school operated by DND in the 1940s and 1950s. Heavy oil was released into the ocean and onto the shoreline. The province blocked the leaking pipe and approached Parks Canada for technical and financial assistance in remediating the site.

THE CHALLENGE – In 2009, a Phase III environmental site assessment confirmed elevated levels of polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons, cadmium, lead, copper and chromium along the main pipeline, around an abandoned concrete building and in the area of an old fuel tank that had been previously removed. Remediation was required due to free-phase petroleum hydrocarbons (free product) in the soil. The project required considerable technical ability because of the remoteness and sensitivity of the impacted area, located on the western shoreline. The transport of heavy equipment to the island and remedial activities, including excavation, dewatering, hauling and disposal of the contaminated material off the island during winter months, were quite a feat.

THE SOLUTION – The human-health risk analysis, which considered the type, amount and location of the contaminants and the island's status as a provincial park, resulted in a remedial action plan to eliminate or significantly reduce the amounts of the identified contaminants to safe levels according to Health Canada guidelines. A 2010 remediation project resulted in the removal of approximately 3,550 m^3 of impacted soil, the concrete building, a tank pad and aboveground tank, and buried pipeline. Follow-up groundwater monitoring in 2011 indicated that remediation objectives were achieved.

THE BENEFITS – This remediation project was the result of a successful collaborative effort between Parks Canada and Public Works and Government Services Canada, with assistance from Health Canada. It was possible due to a positive working relationship with the Province of Nova Scotia, the current landowner. Users of McNabs and Lawlor Islands Provincial Park can now enjoy a safe and fun-filled visit.

Figure 2: Management Stage of Sites in FCSI from 2005–2011



The number of sites in the active phase (undergoing assessment or remediation) and those that were closed (no unacceptable risks to human health and the environment) increased by more than four times (from 3,292 sites in 2004–2005 to 15,059 sites in 2010–2011). The number of closed sites has increased by more than ten times (from 679 in 2004–2005 to 8,122 in 2010–2011). This progress is expected to continue from 2011–2016 as FCSAP enters Phase II, since more funds will be invested in site assessment and remediation. The rate of increase in the number of new sites being added to FCSI has slowed as custodians complete historical reviews of past operations that may have led to site contamination. In 2004, preliminary estimates of federal environmental liability were $3.5 billion; this included nuclear waste sites and unexploded ordinance — initiatives not included under FCSAP. This estimate, however, was based on an incomplete inventory, as many sites were not assessed, and it represented only preliminary costs.[10]

The adjusted liability, which is an estimate of the liability for sites eligible for FCSAP, increased during Phase I from $2.399 billion in 2004–2005 to $2.943 billion in 2010–2011. This increase is attributed to the identification of new sites through assessment and more accurate remediation estimates, especially for large and complex sites such as the Faro and Giant mines.

[10] Remedial strategies for the largest and most complex sites were in the early stages of development.

CASE STUDY

DEPARTMENT OF NATIONAL DEFENCE: POST-REMEDIATION SITE RESTORATION

CFB Esquimalt, Fire Fighter Training Facility near Victoria, British Columbia

THE SITE – The CFB Esquimalt, Fire Fighter Training Facility is located in the municipality of Colwood, directly west of Victoria, British Columbia. The Colwood property houses a number of Base support units, including the Colwood Supply Depot, Fleet Diving Unit Pacific and Damage Control Training Facility (DCTF) Galiano. As part of the upgrades to the DCTF, a former Fire Fighting Training Area (FFTA) was deconstructed, historical contamination remediated and the site restored for use as vehicle parking, a transit bus loop/stop and outdoor activity area.

THE CHALLENGE – Following remediation of approximately 3000 m^3 of metals and hydrocarbon-impacted soil, the project backfilled the site to enable the establishment of a 200-car parking lot, bus transit loop and activity area. Typical stormwater runoff from impermeable surfaces such as paved parking lots can contain various contaminants, including fuel oils and high sediment loads, which can have detrimental impacts on receiving bodies. In this case, the project area was located directly adjacent to Esquimalt Harbour, a productive marine environment that is home to a variety of marine species.

THE SOLUTION – In accordance with the sustainable objectives of CFB Esquimalt, the restoration of the FFTA was designed to incorporate engineered stormwater management principles to manage contaminant loading and create a wetland habitat. The project created a natural drainage swale system (consisting of shallow, sloped channels) that captured hard-surface runoff from the new infrastructure. The drainage system was designed to interconnect all surface-water control and treatment systems to eventually feed into an engineered wetland. Throughout the system, check dams were constructed at regular intervals to slow flow and increase water retention time prior to being discharged into two retention ponds. The two retention ponds were constructed and vegetated with emerging aquatic vegetation and transitional (flood zone) vegetation, and the adjacent upland site was re-vegetated with native species. The first pond functioned as a primary settling pond, which drained to a second pond, which then fed into an outfall point into Esquimalt Harbour. Moving stormwater through these engineered wetlands has allowed for longer infiltration times, thereby allowing for contamination to be removed from the stormwater before it is discharged into Esquimalt Harbour.

THE BENEFITS – The project was used as a showcase outlining sustainable stormwater management principles within Greater Victoria, BC. This site was one of the first in the region and provided an example as an alternative to traditional engineered designs for stormwater management. Implementing engineered wetlands and natural drainage swales reduces the amount of contaminants going into receiving waters. It also promotes biodiversity with an increase in wetland vegetation and increased habitat for native species and waterfowl. The financial benefits include lower installation, overhead and maintenance costs than those associated with traditional stormwater management systems.

4 FCSAP APPROVALS AND EXPENDITURES

This section describes the three types of funding that FCSAP provides; the funding-approval process; and funding allocations, expenditures and variances.

4.1 TYPES OF FUNDING

FCSAP provides three types of funding: assessment, remediation/risk management and program management. Assessment and remediation/risk funding are provided to perform work at contaminated sites. Program management is funded by FCSAP to assist custodians with the management of their site portfolio (for example, procurement, contract management, expert support and reporting). From 2009–2011, CEAP provided $245.5 million in addition to $546.7 million of FCSAP funding, bringing total FCSAP funding to $792 million. Budget 2009 announced $80.5 million of new CEAP funding for program management and assessment, while $165 million was advanced from previously approved funding.

The additional CEAP funding resulted in significant program changes to support the accelerated remediation of contaminated sites. These changes eliminated some of the financial constraints for custodians and streamlined the process for determining FCSAP site eligibility. From 2009–2011:

- custodians were no longer required to cost-share the FCSAP-funded assessment and remediation activities, as FCSAP covered100% of the costs;
- the cap limiting assessment funding to $25 million per year was eliminated; and
- the processes for ranking contaminated sites and determining FCSAP site eligibility were simplified.

These changes enabled custodians with limited environmental program budgets to assess more sites and increase remediation or site-management activities to reduce risks and financial liability at a faster pace.

4.2 FUNDING APPROVALS

Treasury Board approves FCSAP funding based on federal custodians' planned assessment and remediation activities.

On the advice of the FCSAP Secretariat and the TBS, the Federal Contaminated Sites Director General Steering Committee evaluates the sites that are seeking FCSAP funding for remediation and ensures that projects meet the eligibility criteria, in addition to providing general oversight and direction to the program. Another committee of Assistant Deputy Ministers makes resource allocation recommendations to Treasury Board.

Federal custodians are accountable for FCSAP funding that they receive and ensure that their sites meet funding eligibility requirements. For example, custodians must first suspect that a site is contaminated before environmental site assessment activities are funded. Restrictions ensure that remediation or risk-management activities focus on reducing risks associated with contaminants.

CASE STUDY

NATIONAL CAPITAL COMMISSION: WORKING WITH THE COMMUNITY TO PREVENT POLLUTION

Stanley Avenue Park, Ottawa, Ontario

THE SITE – Stanley Avenue Park is a 5.6-hectare open space along the east shore of the Rideau River, adjacent to the community of New Edinburgh in Ottawa. Use of this land included a railway right-of-way and a landfill.

THE CHALLENGE – After several research studies indicated that the park was mainly contaminated with lead, the National Capital Commission (NCC) created a site remediation plan. However, before remediating the site, the NCC consulted with the community to hear its concerns and share plans to address the contamination.

THE SOLUTION – The community meeting resulted in changes to the remediation plan that brought it more in line with community values, but still adequately protected the public from the risks associated with site contamination. The remediation approach was to replace the top layer of contaminated soil with new soil, install a fence along the NCC property line and build a gravel path along the river's edge.

THE BENEFITS – Through the relationship created with the community, the Stanley Avenue Park project became a co-operative effort to rejuvenate the park.

4.3 FUNDING ALLOCATIONS, EXPENDITURES AND VARIANCE

Table C.6 in Appendix C describes allocations and expenditures for the three types of FCSAP funding for both CEAP years. FCSAP expenditures in 2009–2010 were $311 million, or 84% of funding. Expenditures in 2010–2011 were $387 million, or 87% of funding. Expenditures increased by $101 million (48%) in 2009–2010 and $177 million (84%) in 2010–2011, compared to 2008–2009.

FCSAP spending in both years was attributable to remediation or risk-management activities at contaminated sites ($230.5 million, or 74% in 2009–2010 and $304 million, or 79% in 2010–2011). Assessment spending was nearly one-fifth of spending ($56.5 million, or 18% in 2009–2010 and $55.5 million, or 14% in 2010–2011). Program management accounted for 8% in 2009–2010 and 7% in 2010–2011. In 2009–2010, 90% of available assessment funds and 82% of available remediation or risk-management funds were spent. Similarly, in 2010–2011, 93% of assessment funds and 85% of remediation or risk-management funds were spent.

Table C.6 in Appendix C shows the different mechanisms used to account for the variance and the amounts associated with each. Unspent funds can be brought forward for FCSAP activities in future years (through government re-profiling, carry forward or cash-management processes) or it can be lapsed, meaning that the funds will not be available in the future. In 2009–2010, 31% of FCSAP funding variance (unspent funds) was re-profiled, 12% was carried forward, 4% was internally cash managed and 52% was lapsed. In 2010–2011, 19% of FCSAP funding variance was re-profiled, 24% was carried forward, 1% was internally cash managed and 56% was lapsed.

The variances between the available funds and those that were spent were $60 million in 2009–2010 and $59 million in 2010–2011. These values are substantially higher than the variance of $40 million in 2008–2009. This is attributed to increased CEAP funding that was not equally matched by internal project management (for example, procurement and contracting) and external skilled-labour capacity.

Table C.7 in Appendix C shows that most custodians spent more of the available CEAP funding compared to baseline FCSAP funding, for both 2009–2010 and 2010–2011. Custodians with the largest total expenditure in the two CEAP years were AANDC, DND, TC and DFO.

CASE STUDY

ROYAL CANADIAN MOUNTED POLICE: REMEDIATION OF AN RCMP DETACHMENT

Carcross Detachment near Whitehorse, Yukon

THE SITE – The site is located in Carcross, 74 km from Whitehorse, Yukon. It consists of a Royal Canadian Mounted Police (RCMP) detachment and is covered with a combination of lawn and native vegetation.

THE CHALLENGE – Soil and groundwater directly beneath the Detachment were contaminated by a major fuel release in 2002 and leaks occurring in previous years. Contamination extended to the adjacent property owned by the Yukon territorial government, which meant that the Yukon Contaminated Sites Regulation applied to the off-site contamination. The Detachment also had to remain operational while remedial excavation was conducted beneath the building.

© Royal Canadian Mounted Police

THE SOLUTION – In November 2009, almost 1,500 tonnes of waste soil and 3,000 tonnes of contaminated soil were excavated and transported for off-site treatment or disposal. Approximately 30 m^3 of groundwater was collected from the excavation, treated in a temporary on-site water treatment system and discharged to the infiltration bench. Following remedial activities, a post-remediation groundwater investigation was conducted to assess site conditions. The investigation concluded that some residual groundwater contamination remained, but the groundwater plume was delineated. In March 2010, a human-health and ecological risk assessment addressed the residual petroleum hydrocarbon contamination in soil and groundwater. Results indicated that there were no operable exposure pathways for human or ecological receptors. Follow-up site monitoring of groundwater and soil vapour was conducted in 2010–2011. Additional annual monitoring is planned for 2012–2013 and 2013–2014.

THE LIMITATIONS – Extensive remedial work at this remote site required an on-site laboratory. Mobile laboratories have higher method-detection limits than traditional laboratories. As a result, it was not always possible to reach detection limits equal to or lower than the regulatory guidelines for parameters in soil. Therefore, not all analytical soil results could be confirmed to be below the applicable guidelines.

THE BENEFITS – The bulk of the contamination was removed and the Detachment building remained operational throughout the remediation project.

APPENDIX A

Program Administration

PROGRAM ADMINISTRATION

Expert Support and Secretariat Funding

From 2009–2011, $31.3 million was spent for the Secretariat and expert support services. The expenditure breakdown for 2009–2010 and 2010–2011 is shown in Table A.1.

Table A.1: Summary of FCSAP Program Management Expenditures for Secretariat and Expert Support Services (2009–2010 and 2010–2011)

Department	Fiscal Year	Planned FCSAP Expenditures	Actual FCSAP Expenditures	Variance[1]
Fisheries and Oceans Canada Expert Support	2009–2010	3,335,637	3,115,846	219,791
	2010–2011	3,335,637	3,254,676	80,961
Environment Canada Secretariat	2009–2010	3,466,020	2,841,248	624,772
	2010–2011	3,466,020	3,018,458	447,562
Environment Canada Expert Support	2009–2010	3,174,355	2,622,690	551,665
	2010–2011	3,174,355	2,786,269	388,086
Total Environment Canada Secretariat/ Expert Support	2009–2010	6,640,375	5,463,939	1,176,436
	2010–2011	6,640,375	5,804,727	835,648
Health Canada Expert Support	2009–2010	4,182,151 [2]	4,276,806	-94,655
	2010–2011	6,689,725	6,686,888	2,837
Public Works and Government Services Canada Expert Support	2009–2010	900,000	816,334	83,666
	2010–2011	900,000	879,824	20,176
Treasury Board of Canada Secretariat	2009–2010	480,229	478,686	1,543
	2010–2011	480,229	478,330	1,899
Total Expenditures	2009–2010	**15,538,392**	**14,151,610**	**1,386,782**
	2010–2011	**18,045,966**	**17,104,445**	**941,521**

Notes:

1. Variance = Approved + Adjustment – Expenditure.
2. Health Canada's Strategic Review resulted in a reduction of $2.5 million in Operation and Maintenance (O&M) expenses.

Key Activities

Federal Contaminated Sites Action Plan Secretariat

From 2009–2011, the FCSAP Secretariat, under EC's Contaminated Sites Division, provided ongoing support, advice and guidance to ensure continued implementation and enhancement of the program. Along with ongoing program administration, activities focused on developing a strategy and proposal for policy authority and funding approval for Phase II. As part of this initiative, the Secretariat established funding profiles, conducted detailed analyses of performance data and engaged central agencies. The Secretariat also prepared funding-approval documentation for accelerated FCSAP activities undertaken as part of CEAP.

Other activities undertaken by the FCSAP Secretariat included the following:

- **Program Governance:** The FCSAP Secretariat co-chaired and coordinated the Contaminated Sites Management Working Group (CSMWG) and the Federal Contaminated Sites Director General (DG) and Assistant Deputy Minister (ADM) steering committees, and established subcommittees and working group sessions to resolve any FCASP issues.
- **Program Administration:** The project submission process was completed and funding was secured for program partners for 2009–2011. In collaboration with TBS, program expenditure and activity data were collected and analyzed during the annual reporting process, and the Interdepartmental Data Exchange Application was upgraded to meet the program's changing needs.
- **Program Enhancements:** With support from TBS, a performance measurement strategy was developed to better track and report on program objectives. New tools for capturing site-level information for risk reduction were implemented, and priority areas for improving data management within FCSAP were identified.
- **Communications:** The Secretariat promoted FCSAP to external stakeholders by publishing an article in *HazMat* magazine and assisted in the planning and delivery of the Real Property Institute of Canada (RPIC) 2010 National Workshop. Effective engagement of program partners was achieved through regular CSMWG and Interdepartmental Regional Working Group (IRWG) meetings.

Treasury Board Secretariat

From 2009–2011, the Real Property and Materiel Policy Division of TBS supported the activities of the FCSAP Secretariat through the provision of strategic advice and analysis on many program-implementation issues. In partnership with EC, a strategy and proposal for policy authority and funding approval for Phase II of FCSAP was developed. TBS conducted a detailed analysis of performance data related to environmental liabilities in support of program renewal, and engaged central agencies in the Phase II proposal. TBS also prepared funding-approval documentation for accelerated FCSAP activities undertaken under CEAP.

Other activities undertaken by TBS to support FCSAP included

- **Program Governance:** With EC, TBS co-chaired the Federal Contaminated Sites ADM and DG steering committees and participated in the CSMWG and other sub-committees.
- **Data Management Improvements:** In addition to ongoing administration of the FCSI, TBS developed system enhancements, such as enhanced system reporting capabilities. TBS also supported ongoing improvements to data quality, issued an updated FCSI Input Guide in June 2010 and released new data integrity guidance. TBS analyzed priority areas for data management improvements within FCSAP. TBS also supported the maintenance of the federal contaminated sites Web portal.
- **Performance Monitoring and Reporting:** TBS supported the FCSAP annual reporting team, including providing data from FCSI for annual reports. TBS also helped develop a performance measurement strategy for Phase II of FCSAP.
- **Community Building:** Coordination of the interdepartmental planning committee for the May 2010 RPIC Federal Contaminated Sites National Workshop. The workshop brought together more than 550 federal managers, remediation specialists and industry representatives from across Canada to learn about technical, scientific and organizational innovations and best practices for managing federal contaminated sites.

Expert-support Departments

From 2009–2011, expert-support departments mainly focused on developing and delivering guidance documents and training, providing advice, conducting third-party reviews and promoting innovative technologies. Each expert-support department conducted the following activities:

- DFO, EC and HC conducted site visits to understand the unique situations at many sites and to enable expert-support departments to provide better guidance and advice relating to activities at contaminated sites. DFO, EC and HC also provided custodians with advice regarding risk assessments, site classifications, regulations, remedial plans and technical requirements.

- DFO developed the Aquatic Sites Classification System, a key deliverable to the Aquatic Sites Working Group, and provided custodians with informational-needs training for aquatic sites classification. In 2009–2010, DFO delivered internal workshops, *Movement and Fate of Contaminated Sediments in Fish and Fish Habitat and Contaminated Site Restoration and Remediation of Aquatic Environments*. In 2010–2011, DFO completed the final version of the *Framework for Addressing and Managing Aquatic Contaminated Sites under FCSAP* and the draft version of *Developing Long-term Monitoring Programs that Lead to Site Closure for FCSAP Aquatic Contaminated Sites*.

- EC promoted regulatory compliance at federal sites and ensured that site-remediation and risk-management decisions were consistent with federal environmental policies and management objectives. It provided advice to custodians on the best practices and management options for the remediation and risk management of federal contaminated sites. They assisted custodians in selecting contractors to conduct human-health and ecological risk assessments, and reviewed assessments and site classifications. EC also provided custodians with training on the National Classification System for Contaminated Sites (NCSCS) scoring and ecological risk evaluation, *Canada-Wide Standards for Petroleum Hydrocarbons in Soil* and site characterization. EC also liaised with federal departments and provincial/territorial Ministries of Health and Environment, and with federal departments and Aboriginal peoples on health and environmental issues. In 2009–2010, EC developed the final draft of the FCSAP Ecological Risk Assessment Guidance. In 2010–2011, EC created a new template for the NCSCS review, with integrated comments from other expert-support departments.

- HC provided expertise on several human-health risk assessment topics. As part of the FCSAP funding-application process, HC provided custodians with peer reviews of risk-assessment reports on federal contaminated sites. These reports assisted custodians and the Secretariat with the consistent determination of risks posed by federal contaminated sites across Canada. HC also worked on human-health-based soil-quality guidelines and toxicological reference values for several chemicals, and on updates to human-health risk-assessment guidance documents. These guidance tools provide a standardized approach to assess and quantify the risks to human health posed by contaminants on federal sites across Canada. In 2009–2010, HC completed the updates to a series of human health risk assessment guidance documents. In 2010–2011 a protocol for sediment quality guidelines was produced. In both years, HC provided training to the various FCSAP stakeholders in human-health risk assessment, vapour intrusion, and public involvement and risk communication.

- In October 2010, PWGSC delivered Innovative Remedial Solutions Workshops in Vancouver. In 2009–2010, PWGSC completed the Sediment Remediation Conceptual Cost Estimation Tool and consolidated Project Management Tools for Federal Contaminated Sites Remediation Projects. In 2010–2011, PWGSC continued the development of the Site Closure Tool, made revisions and enhancements to the Sediment Remediation Conceptual Cost Estimation Tool and finalized the Sustainable Development Support Tool. The Quebec Region developed a GCPedia page related to FCSAP and provided links to provincial contaminated sites documents.

APPENDIX B

Federal Approach to Managing Contaminated Sites

FEDERAL APPROACH TO MANAGING CONTAMINATED SITES

A contaminated site is an area in which substances are at concentrations above normal background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment. Determining the risk of these substances involves identifying the potential receptors, determining potential exposure pathways and estimating the risk level based on three simultaneous criteria being met: presence of contaminant, of a receptor and of an exposure pathway. Contamination comes from sources that include storage tank leaks, heavy metals, air pollutants and polychlorinated biphenyl (PCB) spills. PCBs are found in many industrial fluids (for example, paints and coolants), some plastics and transformer oils.

To ensure that a common approach is taken to managing federal contaminated sites, FCSAP follows a 10-step process outlined in *A Federal Approach to Contaminated Sites*. [11]

- **Step 1: Identify Suspect Sites:** Identify potentially contaminated sites based on past or current activities on or near the site.
- **Step 2: Historical Review:** Assemble and review historical information pertaining to the site.
- **Step 3: Initial Testing Program:** Provide a preliminary characterization of contamination and site conditions.
- **Step 4: Classify Contaminated Site using the CCME National Classification System:** Prioritize the site for future investigations and remediation and risk-management actions.
- **Step 5: Detailed Testing Program:** Focus on specific areas of concern identified in Step 3 and provide further in-depth investigations and analysis.
- **Step 6: Reclassify the Site using CCME National Classification System:** Update the ranking based on the results of the detailed investigations.
- **Step 7: Develop Remediation and Risk-management Strategy:** Develop a site-specific plan to address contamination issues.
- **Step 8: Implement Remediation and Risk-management Strategy:** Implement the site-specific plan that addresses contamination issues.
- **Step 9: Confirmatory Sampling and Final Reporting:** Verify and document the success of the remediation and risk-management strategy.
- **Step 10: Long-term Monitoring:** Ensure that remediation and long-term risk-management goals are achieved.

The steps indicate the progress at a site. Significantly more time, energy and funding are usually required to complete Step 8.

Site Assessment

When a site is suspected of being contaminated (Step 1), custodians may seek FCSAP funding to conduct a historical review (Step 2) or a Phase I environmental site assessment. This determines what may have caused contamination on the site.

The next step of the environmental site assessment process consists of an initial testing program (Step 3) to confirm the presence and extent of contamination. If contamination exceeds levels specified in policies/guidelines or background levels and may cause a risk, additional detailed testing (Step 5) must occur.

The results from assessments help identify risks to human health and the environment, determine the required remediation or risk-management action, and estimate federal environmental liability for contaminated sites.

Management action is determined by classifying federal sites according to the nature, severity and immediacy of the risk posed to human health and the environment. The National Classification System for Contaminated Sites classifies sites on land, while the Aquatic Sites Classification System classifies sites in water. This classification ensures that available funding is directed to sites most in need. FCSAP funds the remediation or risk management of Class 1 (high priority) and Class 2 (medium priority) sites. Class 3 sites (low priority) are not eligible for FCSAP remediation funding.

[11] A Federal Approach to Contaminated Sites. (Contaminated Sites Management Working Group 2000). http://publications.gc.ca/collections/Collection/EN40-611-2000E.pdf

Remediation and Risk Management of Sites

Remediation removes, reduces or destroys contaminants and pollution from the environment (soil, groundwater or surface water such as lakes and rivers). Risk management attempts to control and manage the contaminants. Both remediation and risk management protect the environment and human health by limiting exposure to hazardous substances. Remediated land offers recreational opportunities for future generations of Canadians and additional habitat for Canada's wildlife. Additionally, the remediation process allows the beneficial land use to be restored for present or future federal government use.

When assessment activities have confirmed that contamination levels pose a risk to human health or the environment, a government department or agency (custodian) oversees the development of the remediation plan (Step 7) and works closely with consultants, contractors and tradespeople to implement the plan (Step 8). Usually, the final stage confirms that the remediation or risk-management objectives have been reached (Step 9). The site may then be closed, indicating that no further action is required and that the federal financial liability has been reduced to zero. However, for sites where the contamination is contained and exposure to people, plants and animals is reduced, long-term monitoring (Step 10) may be necessary to ensure that risks remain at acceptable levels.

APPENDIX C

Data Tables

Table C.1: FCSAP Assessment Funding Available and Expenditures, 2009–2011

Custodian	2009-10				2010-11			
	Number of Sites with Activity	FCSAP Funding Available ($)	FCSAP Expenditures ($)	Custodian Expenditures ($)[1]	Number of Sites with Activity	FCSAP Funding Available ($)	FCSAP Expenditures ($)	Custodian Expenditures ($)[1]
AAFC	32	459,769	423,358	0	37	592,000	495,258	0
AANDC-LED	440	12,125,272	11,437,772	856,375	577	13,617,470	13,481,540	371,334
AANDC-NAO	173	5,743,190	3,852,665	0	249	3,186,282	2,626,293	0
CBSA	0	0	0	0	0	0	0	0
CSC	17	540,205	540,205	0	82	2,288,435	2,239,477	0
DFO	1546	12,947,340	12,942,438	31,986	1078	13,673,240	13,673,240	103,331
DND	116	6,000,000	6,000,000	1,832,043	121	5,000,000	4,616,384	1,190,345
EC	200	2,591,030	2,066,531	17,473	163	3,110,767	3,090,713	0
HC	2	180,000	53,906	0	0	70,000	0	0
JCCBI	0	0	0	0	0	0	0	0
MAI	1	50,000	29,148	20,852	0	0	0	0
NCC	72	1,241,344	1,201,586	0	51	1,314,758	1,165,082	0
NRC	7	280,000	251,509	0	7	445,850	445,850	84,322
NRCan	19	725,000	725,000	11,744	10	240,223	233,204	0
PC	73	6,519,152	4,614,135	0	101	6,171,307	4,488,171	0
PWGSC	35	2,844,356	2,792,733	25,144	48	6,364,671	5,796,977	0
RCMP	240	2,414,720	2,396,503	17,000	144	2,175,000	1,793,892	0
TC	87	7,929,800	7,149,487	0	34	1,325,061	1,325,061	0
Total	**3,060**	**62,591,178**	**56,476,976**	**2,812,617**	**2,702**	**59,575,064**	**55,471,141**	**1,749,332**

Note:
1. Custodian expenditures at FCSAP-funded sites

Table C.2: FCSAP Assessment Expenditures and Activity by Province/Territory, 2009–2011

Province/Territory	2009–2010		2010–2011	
	Number of Sites with Activity	FCSAP Expenditures ($)	Number of Sites with Activity	FCSAP Expenditures ($)
Alberta	119	3,085,398	86	3,340,299
British Columbia	596	13,428,578	505	16,318,408
Manitoba	314	3,126,243	174	3,758,819
New Brunswick	123	1,455,990	180	2,124,974
Newfoundland and Labrador	396	4,978,671	288	4,306,369
Northwest Territories	309	3,849,101	305	3,715,370
Nova Scotia	183	3,030,107	190	2,475,407
Nunavut	66	2,924,666	158	2,470,150
Ontario	499	13,033,230	321	9,384,486
Prince Edward Island	47	693,653	55	674,725
Quebec	209	3,820,629	169	3,959,946
Saskatchewan	166	1,576,886	243	2,450,671
Yukon	33	1,473,824	28	491,517
Total	**3,060**	**56,476,976**	**2,702**	**55,471,141**

Table C.3: FCSAP Remediation Funding Available and Expenditures, 2009–2011

Custodian	2009–2010				2010–2011			
	Number of Sites with Activity	FCSAP Funding Available ($)	FCSAP Expenditures ($)	Custodian Expenditures ($)[1]	Number of Sites with Activity	FCSAP Funding Available ($)	FCSAP Expenditures ($)	Custodian Expenditures ($)[1]
AAFC	5	267,231	267,231	5,897	3	540,000	485,502	0
AANDC-LED	64	36,729,680	24,375,482	90,000	109	38,130,291	37,820,521	3,923,214
AANDC-NAO	29	123,414,177	104,030,529	1,069,760	48	150,811,081	136,005,512	771,498
CBSA	1	264,507	198,303	49,576	0	0	0	0
CSC	1	2,326,986	287,486	0	5	2,151,064	837,135	0
DFO	224	7,637,710	7,635,715	75,486	211	7,009,900	6,970,852	382,859
DND	72	55,133,697	55,133,697	19,009,502	67	55,064,529	51,491,650	6,489,605
EC	58	2,819,798	2,478,852	0	20	12,507,093	8,424,853	0
HC	2	418,000	125,935	0	0	228,000	0	0
JCCBI	1	358,938	90,000	0	0	408,000	0	0
MAI	0	0	0	0	0	70,000	0	0
NCC	6	1,082,094	1,082,094	0	9	2,225,000	2,070,750	0
NRC	2	2,350,000	2,312,573	0	6	2,009,150	2,009,150	0
NRCan	4	11,875,000	6,096,047	0	8	12,679,777	8,955,990	0
PC	45	8,270,075	5,540,550	0	67	14,451,952	12,826,119	0
PWGSC	23	5,491,608	5,491,608	148,759	25	11,039,114	8,583,765	30,000
RCMP	10	2,312,325	2,312,325	0	15	1,930,000	1,204,130	0
TC	37	20,542,742	13,065,544	0	46	45,898,439	26,245,121	0
Total	**584**	**281,294,568**	**230,523,969**	**20,448,980**	**639**	**357,153,390**	**303,931,051**	**11,597,176**

Note:
1. Custodian expenditures at FCSAP-funded sites

Table C.4: FCSAP Remediation Expenditures and Activity by Province/Territory, 2009–2011

Province/Territory	2009–2010		2010–2011	
	Number of Sites with Activity	FCSAP Expenditures ($)	Number of Sites with Activity	FCSAP Expenditures ($)
Alberta	10	425,476	19	3,802,384
British Columbia	142	27,906,026	134	52,294,373
Manitoba	25	12,880,541	26	9,468,201
New Brunswick	10	519,193	14	351,288
Newfoundland and Labrador	83	8,139,763	67	11,497,825
Northwest Territories	20	60,350,958	37	71,697,317
Nova Scotia	59	3,514,452	67	8,197,219
Nunavut	34	62,793,656	37	68,281,790
Ontario	91	12,441,364	116	24,662,095
Prince Edward Island	10	454,986	5	104,891
Quebec	70	6,837,321	95	8,778,978
Saskatchewan	14	2,076,721	5	295,924
Yukon	16	32,183,512	17	44,498,766
Total	**584**	**230,523,969**	**639**	**303,931,050**

Table C.5: Number of Sites on the FCSI, 2005–2011

Fiscal Year	Suspected[1]	Active		Closed[4]	Total[5]
		Assessment[2]	Remediation[3]		
2004–2005[6]	138	1,785	828	679	4,341[7]
2005–2006	4,609	3,415	1,137	1,929	11,090
2006–2007	11,841	4,415	1,396	2,295	19,947
2007–2008	11,510	4,644	1,430	3,032	20,616
2008–2009	10,809	4,243	1,100	4,192	20,344
2009–2010	7,434	5,189	1,309	5,666	19,598
2010–2011	6,958	5,530	1,407	8,122	22,007

Notes:
1. Suspected: HSC = 1 or 2 and site is not closed
2. Assessment: HSC = 3 to 6 and site is not closed
3. Remediation: HSC = 7 or 8 and site is not closed
4. Closed: HSC = 9 or 10 or site is closed
5. Does not include sites that were consolidated in FCSI
6. 2004–2005 represents the composition of the FCSI before FCSAP began
7. Total does not add up to the preceding columns as there are 911 sites where the HSC is unknown in 2004–2005

Table C.6: Program-level Summary of FCSAP Funding Available and Expenditures ($)

	2009–2010				2010–2011			
	Program Management[1]	Assessment	Remediation/ Risk Management	Total Funding	Program Management[1]	Assessment	Remediation/ Risk Management	Total Funding
FCSAP funds approved	25,394,993	62,717,495	282,375,205	370,487,693	28,013,311	44,212,819	344,925,925	417,152,055
FCSAP funding brought forward from previous fiscal years	500,857	-768,952	417,026	148,931	758,582	2,702,276	24,944,345	28,405,203
Internal transfers to another stream[2]	855,028	642,635	-1,497,663	0	56,910	12,659,969	-12,716,879	0
FCSAP funding available	26,750,878	62,591,178	281,294,568	370,636,624	28,828,803	59,575,065	357,153,391	445,557,259
FCSAP expenditures	23,975,744	56,476,976	230,523,969	310,976,689	27,361,682	55,471,141	303,931,050	386,763,873
FCSAP funds reprofiled	0	687,500	17,831,750	18,519,250	0	0	11,027,000	11,027,000
FCSAP funds carried forward	758,582	1,905,017	4,769,025	7,432,624	76,519	118,958	14,061,445	14,256,922
Internal cash management of FCSAP funds	0	109,758	2,343,570	2,453,328	0	224,591	309,770	534,361
Lapsed FCSAP funds	2,016,542	3,411,927	25,826,254	31,254,723	1,390,602	3,760,374	27,824,125	32,975,101
Custodian expenditures	0	2,812,617	20,448,980	23,261,597	0	1,749,332	11,597,176	13,346,508

Notes:
1. Includes expert support, the FCSAP Secretariat and TBS
2. Internal transfers to another stream (between program management, assessment or remediation/risk management)

Table C.7: CEAP vs. Baseline Expenditures, 2009–2011 ($)

Custodian	2009–2010				2010–2011			
	CEAP		Baseline		CEAP		Baseline	
	FCSAP Funding Available	FCSAP Expenditures	FCSAP Funding Available	FCSAP Expenditures	FCSAP Funding Available	FCSAP Expenditures	FCSAP Funding Available	FCSAP Expenditures
AAFC	285,000	285,000	689,000	622,681	412,000	412,000	899,908	748,668
AANDC-LED	15,786,700	15,758,639	34,206,308	21,192,671	17,425,000	17,425,000	35,388,988	34,428,175
AANDC-NAO	11,100,000	11,100,000	121,433,881	100,159,707	11,100,000	11,100,000	145,573,848	128,778,710
CBSA	0	0	264,507	198,303	0	0	0	0
CSC	450,000	450,000	2,492,191	452,692	500,000	500,000	4,014,499	2,651,612
DFO	8,768,600	8,735,897	13,653,070	13,378,875	8,768,600	8,751,170	13,953,070	13,914,022
DND	11,133,697	11,133,697	51,000,000	50,721,234	10,064,529	10,064,529	51,000,000	47,043,505
EC	2,193,753	2,074,825	3,863,342	3,116,824	3,449,100	3,449,099	12,815,027	8,712,735
HC	0	0	728,000	309,841	0	0	428,000	130,000
JCCBI	358,938	90,000	0	0	0	0	408,000	0
MAI	50,000	29,148	0	0	70,000	0	0	0
NCC	1,120,000	1,120,000	1,323,438	1,283,680	2,420,000	2,204,735	1,239,758	1,151,097
NRC	2,380,000	2,351,509	250,000	212,573	2,455,000	2,455,000	0	0
NRCan	12,280,000	6,501,047	370,000	370,000	12,620,000	8,896,213	350,000	342,981
PC	9,077,208	9,077,208	6,652,173	1,588,956	16,010,570	16,010,570	5,642,470	2,333,501
PWGSC	3,820,000	3,768,377	4,715,964	4,697,913	3,530,000	3,480,000	14,073,785	11,082,770
RCMP	4,418,724	4,417,567	703,821	609,818	4,105,000	2,998,022	395,500	311,677
TC	13,045,378	12,501,709	16,583,200	8,869,358	29,106,405	21,792,602	19,273,131	6,933,616
Total	**96,267,998**	**89,394,624**	**258,928,895**	**207,785,126**	**122,036,204**	**109,538,940**	**305,455,984**	**258,563,069**

Table C.8: List of Remediation Sites Funded by FCSAP

Dept	FCSAP Project Name	FCSI #	Province / Territory	2009–2010		2010–2011	
				Total FCSAP Expenditures ($)	Custodian Expenditures ($)	Total FCSAP Expenditures ($)	Custodian Expenditures ($)
AAFC	ATL-1 - Kentville Central Heating Plant	02731004	NS	168,971	0	460,932	0
AAFC	ATL-3 - Sheffield Mills	02738001	NS	———	———	5,500	0
AAFC	BC-2 Summerland APEC 6a	16373015	BC	26,280	0	———	———
AAFC	BC-3 Summerland APEC 6b	16373016	BC	26,279	0	———	———
AAFC	CP-25 Coteau Remediation	00001871	SK	19,901	5,897	———	———
AAFC	CP-26 Battle River-Cutknife Remediation	00001876	SK	25,800	0	———	———
AAFC	Remediation at CP sites in MB	00001360	MB	———	———	19,070	0
AANDC-LED	561 Douglas (08011) - Lelachen IR 6 Remediation Program	00007652	BC	———	———	58,913	0
		00007696	BC	———	———	90,278	0
AANDC-LED	562 Skatin (08015) - Skookumchuck IR 4 Remediation Program	00007709	BC	———	———	221,321	0
		00007711	BC	———	———	133,886	0
AANDC-LED	562 Skatin (08021) - Franks IR 10 Remediation Program	00007704	BC	———	———	52,087	0
		00007705	BC	———	———	2,390	0
		00007706	BC	———	———	88,265	0
AANDC-LED	567 Samahquam - Q'aLaTKu7em Remediation Program	00006943	BC	———	———	384,580	0
		00007654	BC	———	———	422,457	0
		00007904	BC	———	———	95,288	0
AANDC-LED	567 Samahquam (08043) - Sachteen IR 2A Remediation Program	00007702	BC	———	———	44,247	0
		00007905	BC	———	———	60,233	0
AANDC-LED	AEC 13 Former Car Dump	00006949	BC	———	———	2,726	0
AANDC-LED	AEC 8 Bulk Battery Storage	00007697	BC	———	———	48,252	0
AANDC-LED	AEC 9 Community Sawmill	00007698	BC	———	———	9,539	0
AANDC-LED	Attawapiskat J.R Nakogee School	00000595	ON	———	———	76,240	0
		00000596	ON	87,546	0	64,246	0
		00006891	ON	787,918	0	698,240	0
AANDC-LED	Barrenlands Former DOT Site	05260001	MB	93,340	0	181,206	0

Dept	FCSAP Project Name	FCSI #	Province / Territory	2009–2010		2010–2011	
				Total FCSAP Expenditures ($)	Custodian Expenditures ($)	Total FCSAP Expenditures ($)	Custodian Expenditures ($)
AANDC-LED	Barrenlands/Brochet Frontier School Tankfarm	05260005	MB	———	———	14,400	0
AANDC-LED	Bearskin Lake First Nation Remediation II	05147001	ON	28,661	0	———	———
		05147006	ON	28,661	0	———	———
AANDC-LED	Big Grassy First Nation	05148001	ON	0	90,000	———	———
AANDC-LED	Burrard - (07903) Fill on Residential Lot 23-2	00007640	BC	———	———	309,529	0
AANDC-LED	Burrard - (07903) Vehicle Maintenance on Residential Lot 62	00007641	BC	———	———	69,470	0
AANDC-LED	Cayoose Creek Fuel Oil Spill	00006831	BC	217,750	0	———	———
AANDC-LED	Cowessess - Former Residential Dump Site	00007317	SK	400	0	———	———
AANDC-LED	Cowessess - Ravine Dump Site D17	00007316	SK	400	0	———	———
AANDC-LED	Cowichan Tribes IR1 - Former Miller Road Dumpsite Remediation	00007722	BC	2,700,514	0	———	———
AANDC-LED	Cowichan Tribes Koksilah Incinerator Site	00000446	BC	———	———	5,435,911	3,143,613
AANDC-LED	Esquimalt Former ATM Site	05028005	BC	———	———	572,070	0
AANDC-LED	Esquimalt Former Fibre Max Yard	05028006	BC	———	———	1,725,895	0
AANDC-LED	Esquimalt Water Lot Environmental Site Investigation and Remediation	00007746	BC	———	———	102,649	0
AANDC-LED	Fond du Lac Hydrocarbon Impacts Remediation	00006788	SK	87,000	0	———	———
AANDC-LED	Former Beren's River Pumphouse Tankfarm	05230001	MB	233,250	0	8,938	0
AANDC-LED	Former God's Lake School Tankfarm	05301001	MB	54,363	0	———	———
AANDC-LED	Former Northlands School Tankfarm	05310001	MB	54,100	0	9,929	0
AANDC-LED	Former Red Sucker Lake School Tankfarm	05324001	MB	346,033	0	———	———
AANDC-LED	Former School Site "Manto Sipi Cree Nation"	05302001	MB	611,200	0	70,700	0
AANDC-LED	Fuel Spill Remediation – 5085 Highway 101, Sliammon, BC.	00007934	BC	———	———	403,060	0
AANDC-LED	Garden Hill Remediation Project	00005622	MB	———	———	269,600	0
AANDC-LED	Gitwinksihlkw Front of Village Administration Office	05337007	BC	96,058	0	0	102,914

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AANDC-LED	Gitxaala FN Former Community Landfill Site	05023003	BC	———	———	3,486,416	500,000
AANDC-LED	God's Lake Band Tankfarm	00006892	MB	34,757	0	———	———
AANDC-LED	Goodfish Drycleaning Lagoon	00006947	AB	67,700	0	229,908	0
AANDC-LED	Goodfish Drycleaning Plant Remediation	05136002	AB	35,765	0	36,389	0
AANDC-LED	Hopetown Fuel Spill	05040001	BC	108,594	0	4,721,581	0
AANDC-LED	Janvier Landfill	00007871	AB	———	———	564,655	0
AANDC-LED	Kahnawake - ancien dépotoir Beauvais	05198004	QC	19,048	0	19,063	0
AANDC-LED	Kahnawake - Ancien dépotoir Goodleaf	05198005	QC	19,048	0	19,064	0
AANDC-LED	Kahnawake - Ancien dépotoir Johnson's Point	05198006	QC	19,048	0	19,063	0
AANDC-LED	Kahnawake - Ancien dépotoir Khanata	05198003	QC	19,050	0	19,063	0
AANDC-LED	Kahnawake - Ancien dépotoir Morris	00006600	QC	19,048	0	19,064	0
AANDC-LED	Kahnawake - Ancien dépotoir Patton-Lawrence	05198007	QC	19,048	0	19,064	0
AANDC-LED	Kamloops Indian Reserve Dumpsite	05042021	BC	———	———	100,192	0
AANDC-LED	Kasabonika Garage Site Remediation	05160003	ON	———	———	48,078	0
AANDC-LED	Kincolith Abandoned Powerhouse & Former Band Office	05045003	BC	26,031	0	1,382	9,147
		05045008	BC	———	———	1,382	9,147
AANDC-LED	Kingfisher Lake Omahama Store	05162001	ON	———	———	32,178	0
AANDC-LED	Kitchenubmaykoosib Inninuwog - Remediation	00000412	ON	3,383	0	16,672	0
		00000413	ON	10,999	0	72,943	0
		00000414	ON	174	0	———	———
		00000415	ON	2,388	0	10,420	0
		00000416	ON	2,224	0	10,420	0
		00000418	ON	25,472	0	———	———
		00000597	ON	8,477	0	121,709	0
		00006762	ON	1,691	0	4,168	0
		05149001	ON	5,054	0	139,214	0
		05149003	ON	26,651	0	1,187,908	0

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		05149008	ON	13,777	0	516,427	0
		05149013	ON	2,214	0	4,168	0
AANDC-LED	Kwadacha Powerhouse	00006811	BC	53,259	0	77,774	61,524
AANDC-LED	Kyuquot Band Administration Bldg Final Remediation	05041003	BC	———	———	116,264	0
AANDC-LED	Kyuquot Houpsitas 6 Generator Site Remediation	05041009	BC	———	———	1,179,250	0
AANDC-LED	Lac Seul Remediation	05163001	ON	———	———	6,167	0
		05163002	ON	———	———	129,670	0
		05163004	ON	———	———	85,583	0
		05163005	ON	———	———	44,088	0
AANDC-LED	Little Grand Rapids Abandoned Tank 27006A1 on Residential Lot	00007057	MB	244,200	0	111,800	0
AANDC-LED	Lot 103 Penticton Indian Reserve	00007379	BC	856,375	0	———	———
AANDC-LED	Lower Post Residential School	05210004	BC	44,527	0	500,000	0
AANDC-LED	Machoah IR 1 Generator Site Monitoring	00004659	BC	———	———	13,660	0
AANDC-LED	Macoah I.R. No. 1 Sawmill Site Remediation	00006802	BC	4,497,573	0	491,231	0
AANDC-LED	Manto Sipi Band Garage Remediation	00005436	MB	———	———	50,700	0
AANDC-LED	Marten Falls Remediation	00000463	ON	11,799	0	19,481	0
		05166001	ON	11,799	0	61,847	0
		05166002	ON	11,799	0	30,694	0
		05166003	ON	11,799	0	2,979	0
AANDC-LED	Mathias Colomb Area 5B	00006814	MB	2,072,972	0	1,011,628	0
AANDC-LED	Mistawasis Dumpsite 5 Remediation	00000607	SK	———	———	213,200	50
AANDC-LED	North Caribou Remediation	00006671	ON	———	———	13,250	0
		00006675	ON	———	———	39,750	0
		00006676	ON	———	———	2,650	0
		05190003	ON	———	———	45,050	0
		05190004	ON	———	———	66,250	0
		05190006	ON	———	———	50,350	0
		05190007	ON	———	———	47,700	0

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AANDC-LED	Obedjiwan - Duplex vert et ancienne centrale - Gestion du risque	05205001	QC	2,750	0	4,000	0
AANDC-LED	Obedjiwan - Poste de police	05205002	QC	———	———	113,065	0
AANDC-LED	Onion lake FN Historic Fuel Contamination at Makaoo Mall	00006334	SK	990,000	0	17,459	0
AANDC-LED	Pasqua Maintenance Shop Site	00007009	SK	131,366	0	———	———
AANDC-LED	Pikangikum Remediation	05176004	ON	———	———	30,000	0
AANDC-LED	Samahquam - (08043) Small Dumpsite Along Lillooet River (APEC32)	00007703	BC	———	———	72,116	0
AANDC-LED	Sandy Lake Remediation Project	00000486	ON	90,539	0	25,883	0
		05182004	ON	362,156	0	103,532	0
AANDC-LED	Sayisi Dene First Nation Soil Remediation Project	00005528	MB	716,665	0	2,352,032	0
		00005542	MB	716,665	0	2,409,167	0
AANDC-LED	Shamattawa Leonard Miles Drop In Center and Associated Sites	00006939	MB	———	———	50,000	0
		00006940	MB	———	———	43,200	0
AANDC-LED	Shamattawa Remediation Project	00006928	MB	3,621,581	0	———	———
		05328001	MB	1,532,160	0	285,200	0
		05328002	MB	890,190	0	———	———
AANDC-LED	Shxwhay Village JV and Fairview Landfill Closure	00006617	BC	———	———	1,709,437	0
AANDC-LED	Skatin FN - (08016) Dumpsite Near Generator Site (APEC 50)	00007867	BC	———	———	47,928	0
AANDC-LED	Skatin FN - (08016) Dumpsite South of School (APEC 51)	00007870	BC	———	———	65,517	0
AANDC-LED	Skatin FN - (08016) New Generator Site (APEC 49)	00007713	BC	———	———	303,422	0
AANDC-LED	Squamish Capilano I.R. 5 AEC 6 Remediation	00000517	BC	———	———	529,266	0
AANDC-LED	Squamish Mission I.R. 2 AEC 3a Remediation	00000519	BC	———	———	251,466	0
AANDC-LED	St. Theresa Point - Former School Tankfarm & Distribution Lines	00006601	MB	280,654	0	———	———
AANDC-LED	Stoney Wood Preservation Site	05131002	AB	———	———	96,521	0

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AANDC-LED	Sunchild Landfill (Active)	00000662	AB	———	———	81,168	0
AANDC-LED	Tla-o-qui-aht FN - (06873) Waste Site (by foreshore)	00006886	BC	———	———	181,125	84,000
AANDC-LED	Tsawout First Nation Lot 105	00000478	BC	1,231,553	0	———	———
AANDC-LED	Tsawout First Nation Lot 13-1	00000482	BC	———	———	153,084	0
AANDC-LED	Tsay Keh Dene generator station	05029001	BC	35,651	0	297,995	0
AANDC-LED	Tseshaht Former Residential School	00007663	BC	———	———	73,200	0
AANDC-LED	Wasagamack Bulk Fuels Remediation	00005805	MB	———	———	227,360	0
AANDC-LED	Wasagamack Landfarm for School Tankfarm soils	05306003	MB	———	———	720,000	0
AANDC-LED	Waskaganish - Centrale d'énergie au diesel (WK-K) - assainiss.	05357005	QC	25,000	0	19,229	12,820
AANDC-LED	Wunnamin Lake Remediation	05194003	ON	15,617	0	———	———
AANDC-NAO	BAR C - Tununuk	00000379	NT	———	———	539,615	0
AANDC-NAO	Bear Island	C1039001	NU	39,211	0	7,828,087	0
AANDC-NAO	Bullmoose and Ruth Mine Area	00000068	NT	221,782	0	222,080	0
		00000405	NT	———	———	222,080	0
		00023544	NT	———	———	222,080	0
		00023548	NT	———	———	222,080	0
		00023777	NT	———	———	222,080	0
		00023964	NT	———	———	222,080	0
		C1033001	NT	237,046	0	222,080	0
AANDC-NAO	CAM A - Sturt Point	C1041001	NU	———	———	530,963	0
AANDC-NAO	CAM D - Simpson Lake	C1002001	NU	3,995,018	0	5,932,164	0
AANDC-NAO	Canol Trail	C1009001	NT	0	620,731	2,706,289	0
AANDC-NAO	Cape Christian	C1005001	NU	4,913,300	0	5,196,261	0
AANDC-NAO	Clinton Creek Mine	C1052001	YT	650,554	0	811,390	0
AANDC-NAO	Colomac Mine	C1047001	NT	12,688,412	0	20,090,681	0
AANDC-NAO	Contact Lake	C1051001	NT	674,467	0	715,041	0
AANDC-NAO	El Bonanza Mine	00000076	NT	674,467	0	715,041	0
AANDC-NAO	Faro Mine	C2503001	YT	19,396,392	0	28,839,928	0
AANDC-NAO	FOX B - Nadluardjuk Lake	C1020001	NU	115,390	1,542	———	———
AANDC-NAO	FOX C - Ekalugad Fjord	C1049001	NU	———	———	48,705	0

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AANDC-NAO	FOX E - Durban Island	C1022001	NU	———	———	601,260	0
AANDC-NAO	Frobisher Sour Gas Wells	00023468	NT	———	———	2,511,909	0
AANDC-NAO	Giant Mine	C1048001	NT	31,254,509	0	24,786,567	0
AANDC-NAO	Grand Roy and Muskox Mines	00000407	NT	———	———	1,421,433	0
AANDC-NAO	Great Slave Lake	00000387	NT	———	———	264,100	0
		00000402	NT	———	———	264,100	0
		00023546	NT	———	———	264,100	0
		C1038001	NT	———	———	264,100	0
AANDC-NAO	Hidden Lake Mine - Remediation	C1025001	NT	516,584	0	862,348	0
AANDC-NAO	Hope Lake	00000058	NU	———	———	172,542	0
		00000347	NU	———	———	172,542	0
		00023429	NU	———	———	172,542	0
		00024129	NU	———	———	172,542	0
AANDC-NAO	Indore Gold Mine-Beaverlodge Lake	C1026001	NT	127,336	0	196,023	0
AANDC-NAO	Jean Marie River	00000329	NT	———	———	0	653,530
AANDC-NAO	Johnson Point	00000841	NT	5,282,839	0	697,266	0
AANDC-NAO	Mount Nansen Mine	C2505001	YT	3,169,716	0	3,150,095	0
AANDC-NAO	North Inca Mine - Remediation	C1028001	NT	1,280,286	0	96,635	0
AANDC-NAO	Padloping Island	C1016001	NU	———	———	516,581	0
AANDC-NAO	PIN B - Clifton Point	C1050001	NU	3,843,005	0	6,266,817	0
AANDC-NAO	PIN D - Ross Point	C1040001	NU	501,842	0	138,793	0
AANDC-NAO	PIN E - Cape Peel	C1045001	NU	461,433	0	133,405	0
AANDC-NAO	Rayrock Mine	C1031001	NT	———	———	0	117,967
AANDC-NAO	Roberts Bay Mine	C1056001	NU	2,725,985	0	1,632,279	0
AANDC-NAO	Sawmill Bay	00000403	NT	674,467	0	1,430,081	0
AANDC-NAO	Silver Bear Mines	C1010001	NT	168,617	0	195,409	0
		C1011001	NT	168,617	0	195,409	0
		C1012001	NT	168,617	0	195,409	0
		C1013001	NT	168,617	0	195,409	0
AANDC-NAO	Tundra-Taurcanis Mine	C1035001	NT	5,320,875	0	9,873,936	0
AANDC-NAO	United Keno Hill Mine	C2509001	YT	4,079,816	0	3,653,157	0
AANDC-NAO	Victoria Island L17	00000021	NT	511,330	447,487	———	———

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CBSA	Pleasant Camp Border Crossing	19878001	BC	198,303	49,576	———	———
CSC	330-C01 Leclerc - Former Tank Nest Remediation	00013010	QC	———	———	35,663	0
CSC	352-C01 La Macaza - Fuel Storage Tank Remediation	00013011	QC	———	———	227,894	0
CSC	401-C01 RHQ Ontario - Parking Lot Excavation	00024633	ON	———	———	291,566	0
CSC	443-C06 Beaver Creek - Fuel Tank Remediation	00013017	ON	287,486	0	———	———
CSC	451-XXX Pittsburgh	09434003	ON	———	———	159,637	0
CSC	460-C01 Warkworth - Underground Storage Tanks Remediation	00023469	ON	———	———	122,376	0
DFO	3 Mile Gap RRM	85124001	ON	———	———	46,309	0
DFO	Addenbroke Island	67677001	BC	7,989	0	16,950	0
DFO	Allans Island (Lamaline) Lightstation	00018385	NL	15,934	0	———	———
DFO	Amour Point	00024391	NL	———	———	24,055	0
DFO	Arnolds Cove SCH - Uplands	00019000	NL	———	———	17,130	0
DFO	Baccalieu Island Northeast – Minor Shore Light	00012285	NL	———	———	30,794	0
DFO	Baccalieu Island Southwest – Lightstation	80521001	NL	———	———	2,716	0
		80521002	NL	———	———	2,716	0
		80521003	NL	———	———	2,716	0
DFO	Badgeley Island	00023173	ON	———	———	21,375	0
		00014120	ON	———	———	21,375	0
DFO	Bagot (escarpement)	08032001	QC	12,788	0	5,197	0
DFO	Baie d'urfé (port) QS03516	00012469	QC	144,888	0	———	———
DFO	Baie Trinité (Côte-Nord), ancien FR	82167001	QC	3,555	0	8,373	0
DFO	Ballenas Island	17675001	BC	7,989	0	16,950	0
DFO	Barre à Boulard, ancien FA	82168001	QC	10,738	0	———	———
DFO	Barre à Boulard, ancien FP QE30960	00013294	QC	54,967	1,986	———	———
DFO	Battle Harbour SCH R/RM	01786001	NL	———	———	16,013	0
DFO	Bay Fortune Wharf SCH	01970003	PE	———	———	25,466	0
DFO	Bay L'Argent SCH - Uplands	00012591	NL	———	———	22,638	0
DFO	Bay Roberts SCH	00012541	NL	19,570	0	———	———

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DFO	Bear Cove Point Lightstation	00012257	NL	12,764	0	80,672	931
	Bear Cove Point Lightstation	00012258	NL	12,764	0	———	———
DFO	Beaumont QE27440	00021642	QC	———	———	21,614	0
DFO	Beauty Island (Ontario) RRM	00014156	ON	———	———	46,455	0
DFO	Beaver Island	03117001	NS	———	———	8,008	0
		03117002	NS	———	———	8,216	0
DFO	Bécancour QE32570	06276001	QC	8,200	0	11,986	0
DFO	Belleville Small Craft Harbour	30246002	ON	800,000	0	———	———
DFO	Besserer FA et FP	00011573	QC	6,100	0	———	———
DFO	Betty Island	00000857	NS	20,549	0	28,102	0
DFO	Bliss Island	04051001	NB	———	———	16,994	0
DFO	Blockhouse Point	02072001	PE	99,139	0	15,232	0
DFO	Boars Head	02476001	NS	139,272	0	———	———
DFO	Boat Bluff	67678001	BC	7,989	0	16,950	0
DFO	Bois Blanc Island	72033001	ON	5,069	0	———	———
		72033002	ON	5,069	0	———	———
		72033003	ON	5,069	0	———	———
		72033004	ON	5,069	0	———	———
		72033005	ON	5,069	0	———	———
DFO	Bon-Désir	82169001	QC	10,913	0	31,578	0
DFO	Bonilla Island Sector	19482001	BC	7,989	0	16,950	0
DFO	Brier Island	02477001	NS	4,897	0	9,024	0
		02477002	NS	4,897	0	8,216	0
DFO	Brigus	00013256	NL	1,200	0	16,164	0
DFO	Burnt Point Lightstation	34931001	NL	17,712	0	38,640	0
DFO	Campbellton SCH R/RM	00012599	NL	———	———	11,925	0
DFO	Cannings Cove SCH – SSRA	00022937	NL	10,408	4,000	———	———
		00019045	NL	10,408	0	———	———
DFO	Cap à l'Est QE76300	07998001	QC	———	———	28,629	0
DFO	Cap aux Corbeaux, ancien FA	82133001	QC	5,308	0	7,994	0
DFO	Cap aux Corbeaux, ancien FP	82172001	QC	5,308	0	7,994	0
DFO	Cap des roches QE76200	08001001	QC	11,310	0	———	———

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DFO	Cap-de-Rabast	08029002	QC	———	———	7,968	0
DFO	Cape Anguille Lightstation R/RM	00018182	NL	———	———	11,008	0
		00024470	NL	———	———	11,008	0
		00024471	NL	———	———	11,008	0
DFO	Cape Beale	17809001	BC	7,989	0	16,950	0
DFO	Cape Bonavista Lightstation	34624001	NL	88,848	0	———	———
		34624002	NL	88,848	0	———	———
DFO	Cape George (LL892)	00013372	NS	75,925	0	———	———
DFO	Cape George LL840	00012309	NS	———	———	19,615	0
DFO	Cape Mudge	18225001	BC	579,432	0	27,702	0
DFO	Cape Negro Island	02296001	NS	———	———	11,539	0
		02296002	NS	———	———	10,216	0
DFO	Cape Norman	01730001	NL	1,200	0	———	———
DFO	Cape Pine Lightstation	00023100	NL	600	0	15,747	0
		34599001	NL	600	0	15,747	0
DFO	Cape Ray Lightstation	00721001	NL	107,794	0	———	———
DFO	Cape Roseway	02334002	NS	———	———	10,878	0
		02334003	NS	———	———	10,878	0
DFO	Cape Sable	02298001	NS	———	———	20,539	0
DFO	Cape Scott	19007001	BC	7,989	0	16,950	0
DFO	Cape Spencer	03876001	NB	———	———	18,980	0
DFO	Carmanah Point	17533001	BC	7,989	0	16,950	0
DFO	Cascades-Soulanges	82179001	QC	24,743	0	995	0
DFO	Change Island SCH – SSRA	00022956	NL	4,216	0	———	———
		00022959	NL	4,216	0	———	———
		00019056	NL	4,216	0	———	———
		00022958	NL	4,216	0	———	———
DFO	Chatham Point	18090001	BC	7,989	0	16,950	0
DFO	Chrome Island Range	18001001	BC	7,989	0	16,950	0
DFO	Coldspring Head	00012320	NS	128,556	0	———	———
DFO	Comfort Cove SCH – SSRA	00023003	NL	16,526	0	———	———
DFO	Conception Harbour SCH	00019062	NL	———	———	20,990	0
DFO	Contrecoeur QE35380	00013221	QC	———	———	5,040	0

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DFO	Cove Island	00000863	ON	11,643	0	83,693	0
		00024545	ON	11,643	0	28,642	0
DFO	Cross Island	02645001	NS	———	———	15,008	0
DFO	Cultus Lake Laboratory	16509001	BC	20,859	0	———	———
DFO	Davieaux Island	67653001	ON	15,957	0	———	———
		67653002	ON	15,957	0	———	———
		67653003	ON	15,957	0	———	———
DFO	Deception Bay R/RM	00014263	ON	216	0	———	———
DFO	Deep River Islet	83865001	ON	41,981	0	———	———
DFO	Deline Wharf	00016213	NT	89,665	0	———	———
DFO	Discovery Island	17425001	BC	7,989	0	16,950	0
DFO	Dryad Point	67679001	BC	7,989	0	16,950	0
DFO	East Ironbound Island	02704001	NS	25,083	0	391,632	0
DFO	East Point	01986001	PE	10,787	0	———	———
DFO	Egg Island	67680001	BC	7,989	0	16,950	0
DFO	Entrance Island	17611001	BC	7,989	0	16,950	0
DFO	Estevan Point	17813001	BC	7,989	0	16,950	0
DFO	Finger Pier (01333) - Uplands	00019313	NL	4,326	0	———	———
DFO	Finger Pier (01333) - Waterlot	01333003	NL	4,326	0	———	———
DFO	Flint Island	03685001	NS	———	———	18,544	0
DFO	Flowerpot Island	10976001	ON	64,882	0	———	———
		10976002	ON	64,882	0	———	———
DFO	Former Pipeline	00018580	NL	———	———	8,386	0
DFO	Fort Malden Front Range	10703001	ON	19,075	0	———	———
DFO	Fort Malden Rear Range	85904001	ON	19,075	0	———	———
DFO	Fortune SCH	00490002	NL	24,827	0	———	———
DFO	Gereaux Island (Britt IRB)	00024378	ON	———	———	6,031	0
DFO	Giants Tomb	11113001	ON	39,419	0	36,800	0
DFO	Gignac QE58430	00013224	QC	———	———	4,963	0
DFO	Goose Cove Small Craft Harbour	23863002	NL	20,396	0	———	———
DFO	Grand Passage	02483001	NS	30,628	0	39,712	0
DFO	Grande Île QE26500	05547001	QC	15,968	0	196,807	0
		05547002	QC	15,968	0	10,000	0

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		05547003	QC	15,968	0	30,000	0
DFO	Grandes Bergeronnes, ancien FA	08187001	QC	13,037	0	6,581	0
DFO	Grandes Bergeronnes, ancien FP	82081001	QC	13,037	0	6,581	0
DFO	Great Duck Island	03987001	NB	———	———	15,008	0
DFO	Green Island	67681001	BC	7,989	0	16,950	0
DFO	Green Island (Catalina) - Area 3 - Boat Landing	00023102	NL	———	———	11,938	0
DFO	Green Island (TB) Lightstation	00023101	NL	600	0	11,938	0
		01107001	NL	600	0	11,938	0
DFO	Green Island Brook SCH	01668001	NL	34,498	0	———	———
DFO	Grondines, pointe amont FA QE61340	06155001	QC	5,532	0	———	———
DFO	Grondines, pointe des (amont), ancien FP	82189001	QC	4,489	0	6,674	0
DFO	Hay Point Range	00023057	ON	———	———	24,220	0
		00023058	ON	———	———	24,220	0
DFO	Heart's Delight SCH	00013264	NL	19,570	0	———	———
DFO	Henry Island	67639001	NS	———	———	190,090	0
DFO	Howards Cove	02235003	PE	13,603	0	———	———
DFO	Hydrocarbons in soils	06813001	BC	———	———	21,766	0
DFO	Ile à Durand QE27870	24464001	QC	———	———	23,400	0
DFO	Île aux Noix, ancien FP - 1	82088001	QC	4,829	0	———	———
DFO	Île aux Noix, ancien FP - 2	82088002	QC	33,682	0	32,534	0
DFO	Île Bicquette	05469001	QC	———	———	660	0
DFO	Île Bouchard FP QE35710	82059001	QC	8,241	0	15,969	0
DFO	Ile Haut	00012315	NS	32,523	0	20,529	0
DFO	Ile Parisienne	83048001	ON	21,673	0	———	———
		83048002	ON	21,673	0	———	———
DFO	Ile Rouge – QE70100	08204001	QC	———	———	3,507	0
DFO	Île Sainte-Marie	08269001	QC	58,238	0	38,867	0
DFO	Île Sainte-Rosalie, ancien feu de référence	82214001	ON	———	———	48,121	0
DFO	Île Verte	05514001	QC	14,539	0	83,204	2,000
DFO	Institute of Ocean Sciences (and Victoria MCTS)	21941001	BC	47,429	0	9,072	0

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DFO	Isaac's Harbour	00012307	NS	88,322	0	———	———
DFO	Ivory Island	67682001	BC	7,989	0	16,950	0
DFO	Jannacks Narrows RRM	83474001	ON	———	———	44,219	0
DFO	Kenora Base	12151001	ON	45,499	0	———	———
DFO	Keswick Marina	00012660	ON	45,779	0	———	———
DFO	Killarney East	83054001	ON	62,041	0	80,413	0
DFO	Killarney Northwest	83490001	ON	62,041	0	80,412	0
DFO	Killarney West Entrance	00014474	ON	———	———	80,412	0
DFO	Killiniq	00016384	NU	18,775	0	———	———
		00023066	NU	18,775	0	———	———
		00023067	NU	18,775	0	———	———
		00023068	NU	18,775	0	———	———
DFO	La Haye Point	00000892	NL	12,524	0	———	———
DFO	Lameque Small Craft Harbour	04939001	NB	15,253	0	12,927	0
DFO	Langara Island	19401001	BC	7,989	0	16,950	0
DFO	Lawn SCH	00023020	NL	17,772	0	———	———
DFO	Leard's Range (Front)	02075001	PE	10,787	0	———	———
DFO	Lennard Island	17812001	BC	7,989	0	16,950	0
DFO	Liscomb Island	03319001	NS	———	———	15,008	0
DFO	Little Detroit Minor Shore Light	00014514	ON	———	———	31,642	0
DFO	Long Pèlerin QE26400	00021639	QC	———	———	7,157	0
		00022204	QC	———	———	7,157	0
		00022914	QC	———	———	7,157	0
		00022917	QC	———	———	7,157	0
DFO	Lotbi QE30810	00013231	QC	———	———	8,254	0
DFO	Louisbourg	00012243	NS	15,486	0	17,516	0
		00022975	NS	15,486	0	6,216	0
DFO	Loutre QE76210	22317001	QC	———	———	6,255	0
DFO	Lunenburg (Fisherman's Wharf) Small Craft Harbour	00013237	NS	26,330	0	———	———
DFO	Lyal Island RRM	10960001	ON	———	———	47,039	0
DFO	Machias Seal Island	03984001	NB	14,806	0	17,500	0
DFO	Main Wharf (01336) - Waterlot	01333002	NL	4,326	0	———	———

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DFO	Margaree Island	00012322	NS	———	———	31,366	0
DFO	Mccallum SCH - Uplands	00019213	NL	———	———	14,729	0
DFO	McColgan Point	00000852	NB	———	———	18,980	0
DFO	McInnes Island	67683001	BC	7,989	0	16,950	0
DFO	McNab Point	56025001	ON	———	———	124,297	0
DFO	Meaford Harbour	00022948	ON	13,479	0	———	———
		00022950	ON	13,479	0	———	———
		00015130	ON	13,479	0	———	———
DFO	Melocheville	07329001	QC	8,912	0	———	———
DFO	Merry Island	18460001	BC	7,989	0	16,950	0
DFO	Metals and Hp in helicopter pad and fill area	05469002	QC	———	———	2,593	0
DFO	Metals and HP South end of the Island	05469005	QC	———	———	2,593	0
DFO	Metals in center area of the Island	05469004	QC	———	———	2,593	0
DFO	Metals in West area of the Island	05469003	QC	———	———	2,593	0
DFO	Middle Head (St. Lawrence) Lightstation	00023125	NL	8,276	0	———	———
		00023126	NL	8,276	0	———	———
		00018437	NL	8,276	0	———	———
DFO	Mosher Island	02650001	NS	———	———	15,008	0
DFO	Natashquan, ancienne station DECCA - QE86800	00021944	QC	———	———	579,374	43,350
DFO	New Aiyansh Office & Residences - Nass Camp	00000885	BC	21,810	0	113,962	0
DFO	New Mills (Former Salmon Rearing and Boathouse)	00013167	NB	85,993	0	10,205	0
DFO	Nine Mile Point	58204001	ON	272,683	0	74,648	0
DFO	Nootka Island	18086001	BC	7,989	0	16,950	0
DFO	Nottawasaga Island	11032001	ON	39,800	0	19,862	0
DFO	O'Donnells SCH	00019241	NL	11,117	0	———	———
DFO	Oriliia MCTS	11079001	ON	216	0	———	———
DFO	Outer Island (Bon Portage)	00012246	NS	———	———	20,539	0
DFO	Pachena Point	17810001	BC	7,989	0	16,950	0
DFO	Pacific Biological Station Risk Management	17598001	BC	27,906	0	65,812	0

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DFO	Panmure Head	01936001	PE	111,533	0	10,451	0
DFO	Peter Island	02480001	NS	———	———	16,281	0
DFO	Petites SCH	00019254	NL	———	———	22,227	6,431
DFO	Phare de Pointe Mitis (QE 21500)	05409001	QC	———	———	39,676	0.00
DFO	Pictou Harbour Range Front	00016860	NS	———	———	10,320	0.00
DFO	Pictou Harbour Range Rear	00016861	NS	———	———	10,320	0.00
DFO	Pictou Island South	03263001	NS	166,203	0	———	———
DFO	Pie Island	00014821	ON	73,946	0	380,405	0
DFO	Pigeon Island RRM	00013954	ON	———	———	39,408	0
DFO	Pilier de Pierre	05668001	QC	———	———	28,629	0
DFO	Pine Island	19125001	BC	7,989	0	16,950	0
DFO	Pinkut Off Site Landfill Remediation	00023076	BC	———	———	20,450	0
DFO	Pistolet Bay Former Transmitter Site	80104001	NL	44,950	0	16,839	0
		80104002	NL	44,950	0	16,839	0
DFO	Point Amour Lightstation	00022982	NL	26,125	0	———	———
		00022983	NL	26,125	0	———	———
		00022984	NL	26,125	0	———	———
		00022985	NL	26,125	0	———	———
		01770001	NL	26,125	0	———	———
		01770002	NL	26,125	0	———	———
DFO	Point Atkinson Lightstation Risk Management	00000878	BC	7,989	0	16,950	0
DFO	Pointe au Baril Lightstation	11512001	ON	206,053	0	———	———
DFO	Pointe au Maquereau, ancien FR QE14100	05286001	QC	35,152	0	247,349	0
DFO	Pointe Carleton	08025001	QC	———	———	7,969	0
DFO	Pointe Dowker	07364001	QC	60,928	0	34,628	0
DFO	Pointe du Sud-Ouest QE85540	00000893	QC	4,263	0	———	———
		08031002	QC	4,263	0	———	———
		08031003	QC	4,263	0	14,799	0
DFO	Pointe-Verte SCH	04890001	NB	7,810	0	———	———
		04890002	NB	7,810	0	———	———

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DFO	Port La Tour Small Craft Harbour	00012625	NS	3,427	0	———	———
DFO	Port Mouton	00012299	NS	21,655	0	25,866	0
DFO	Port Rivière-Madeleine QS03764	05247001	QC	9,831	0	———	———
DFO	Port-au-persil - QS03739	00012508	QC	———	———	11,525	0
DFO	Port-Daniel QE13600	05294001	QC	81,593	0	———	———
DFO	Powles Head Lightstation	00007001	NL	600	0	61,644	589
		00007002	NL	600	0	143,837	1,375
DFO	Prince Rupert - Seal Cove (and Prince Rupert MCTS)	00013093	BC	26,919	0	8,422	0
DFO	Prince Rupert Marine Station - Sourdough Bay Risk Management	00000881	BC	212,257	9,221	———	———
DFO	Pugwash R/RM	00016876	NS	———	———	15,794	0
DFO	Pulteney Point	19084001	BC	7,989	0	16,950	0
DFO	Quatsino (Kains Island)	19006001	BC	7,989	0	16,950	0
DFO	Queensport	03389001	NS	———	———	19,804	0
DFO	Red Head Small Craft Harbour	00013274	PE	7,853	0	———	———
		01981002	PE	7,853	0	———	———
DFO	Rocher l'Hôpital QE27820	05667001	QC	14,858	0	57,270	0
DFO	Rocky Harbour SCH	00019302	NL	———	———	26,213	0
DFO	Rocky Point Minor Aid	00018535	NL	———	———	31,362	0
DFO	Rose Blanche (Diamond Cove) Small Craft Harbour	34627001	NL	34,198	0	22,176	0
		34627003	NL	34,198	0	22,176	0
DFO	Sable Island	81514001	NS	———	———	21,518	0
DFO	Sagona Fog Signal – SSRA	00620001	NL	9,371	0	———	———
		00620002	NL	9,371	0	———	———
DFO	Sainte-Marthe-de-Gaspé	05263001	QC	112,874	60,280	25,900	0
DFO	Sandy Cove East Small Craft Harbour	00012627	NS	13,391	0	———	———
		00013275	NS	13,391	0	41,348	0
DFO	Saugeen River Range Rear	00014908	ON	———	———	65,397	0
DFO	Scarlett Point	19052001	BC	7,989	0	16,950	0
DFO	Schafner Point	00012301	NS	22,717	0	46,661	0
DFO	Scotch Bonnet RRM	00014017	ON	———	———	40,429	0

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DFO	Sea Island Hovercraft Base Risk Management	84580001	BC	290,436	0	183,396	328,179
DFO	Seacow Head	02170001	PE	165,549	0	24,542	0
DFO	Seal Island	00017476	NS	7,512	0	7,216	0
		00017477	NS	7,512	0	7,731	0
		02389002	NS	7,512	0	7,216	0
DFO	Seldom Come By SCH	01333001	NL	4,326	0	———	———
DFO	Shag Harbour Small Craft Harbour	00013241	NS	1,007	0	———	———
		00013244	NS	1,007	0	———	———
		00013245	NS	2,207	0	———	———
DFO	Sheringham Point	00000879	BC	7,989	0	16,950	0
DFO	Silver Water MCTS RRM	00015116	ON	———	———	41,652	0
DFO	Southwest Head	03983001	NB	———	———	12,500	0
DFO	Southwest Wolf Island	00017667	NB	9,387	0	15,008	0
DFO	Spruce Point	00000851	NB	3,761	0	———	———
DFO	Squirrel Island Rear Range RRM	00014029	ON	———	———	32,228	0
DFO	SSERA Gereaux Island	00012239	ON	9,337	0	6,032	0
		00013238	ON	9,337	0	———	———
		00013239	ON	9,337	0	6,031	0
		00013240	ON	9,337	0	6,031	0
		00024547	ON	9,337	0	6,031	0
DFO	SSERA Griffith Island	58231001	ON	33,681	0	56,128	0
DFO	St. Anthony SAR	67622001	NL	———	———	8,386	0
DFO	St. Bernard's SCH	00019337	NL	12,373	0	———	———
DFO	St. John's (Prosser Rock) SCH	00019348	NL	11,117	0	———	———
DFO	St. Lewis Field Office R/RM	58590001	NL	———	———	17,532	0
DFO	Stokes Bay Range Front RRM	10961001	ON	———	———	10,379	0
		10961002	ON	———	———	27,688	0
		85917001	ON	———	———	33,462	0
DFO	Swallowtail	03988001	NB	186,893	0	———	———
DFO	Thicket Portage	00012749	MB	28,501	0	———	———
DFO	Tides Cove Point Lightstation	00519001	NL	17,370	0	———	———
DFO	Tignish Small Craft Harbour	00018015	PE	———	———	29,200	0

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DFO	Tiverton Radar/ Communications	02484001	NS	25,008	0	———	———
DFO	Tobermory (Little Tub Harbour)	00022955	ON	30,533	0	———	———
		00012751	ON	30,533	0	———	———
DFO	Trial Islands	17330001	BC	7,989	0	16,950	0
DFO	Trowbridge Island	83046001	ON	18,597	0	22,088	0
		83046002	ON	18,597	0	22,088	0
		83046003	ON	18,597	0	22,088	0
DFO	Turners Rock (Bear Island) RRM	00015044	ON	———	———	44,506	0
DFO	Victoria Base Risk Management	17385001	BC	94,114	0	63,951	0
DFO	Victoria Beach	00012300	NS	22,066	0	64,289	0
DFO	Wesleyville SCH	01267001	NL	———	———	9,079	0
		01267002	NL	36,209	0	9,079	0
DFO	West Vancouver Laboratory - Upland Portion	00022185	BC	13,089	0	20,093	0
DFO	Whiskey Jack Portage (Kiskittogisu Lake)	00012802	MB	14,250	0	———	———
		00022993	MB	14,250	0	———	———
DFO	White Head Island	00013058	NS	———	———	14,149	0
DFO	Whitehead Island	02385001	NS	14,144	0	84,802	0
DFO	Wiarton Marina	00022922	ON	24,598	0	———	———
		00022923	ON	24,598	0	———	———
DFO	Wood Island RRM	85123001	ON	———	———	33,966	0
DFO	Wood Islands Light	81209001	PE	10,787	0	———	———
DND	3 Wing Aerodrome	07930004	QC	5,116	4,580	10,745	2,686
DND	3 Wing Mount Apica North Slope	05613001	QC	———	———	71,533	17,883
DND	5 Wing Goose Bay	00008429	NL	127,654	0	471,578	0
		01822018	NL	672,302	0	1,013,769	0
		01822043	NL	130,813	0	390,278	0
		01822076	NL	834,955	0	405,777	0
		01822085	NL	879,119	0	521,887	0
		01822086	NL	62,271	0	368,343	0
		01822087	NL	135,482	0	511,844	0

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		01822094	NL	690,329	0	1,142,252	0
		N7075001	NL	1,041,262	0	1,238,839	0
		N7077001	NL	1,008,348	0	1,043,176	0
DND	ADMMAT METC Nicolet Ditches and Rivers	06294008	QC	5,930	5,309	———	———
		06872003	QC	5,930	5,309	———	———
		06872009	QC	5,930	5,309	———	———
		06872010	QC	5,930	5,309	———	———
DND	ADMMAT METC Nicolet Ile Moras Decommissioning	06872002	QC	4,170	3,733	21,659	5,415
		06872012	QC	4,170	3,733	———	———
DND	Ancienne SFC Moisie - site Admin	N7096001	QC	25,895	23,181	117,159	29,290
DND	Assainissement du site de l'ancien puit P-2	05906061	QC	128,649	115,164	35,424	8,856
DND	ASU London Wolsley Barracks	10869001	ON	4,162	3,726	14,333	3,583
DND	Cadet Camp Landfill	00008347	ON	———	———	91,460	22,865
DND	CAM-1 Jenny Lind Island DEW Line	C7017001	NU	2,288,394	2,048,521	268,412	29,824
DND	CAM-2 Gladman Point DEW Line	C7018001	NU	50,945	45,605	126,955	14,106
DND	CAM-3 Shepherd Bay DEW Line	C7027001	NU	55,992	50,122	136,693	15,188
DND	CAM-4 Pelly Bay DEW Line	C7019001	NU	1,386,638	1,241,289	97,628	10,848
DND	CAM-5 Mackar Inlet DEW Line	C7020001	NU	4,527,650	4,053,055	8,511,760	945,751
DND	CAS 3 Wign Bagotville – NCSM Champlain	69920001	QC	———	———	27,985	7,000
DND	CAS 3 WING POL TANK FARM	07930009	QC	———	———	3,975	994
DND	CAS 8 Wing - Middleton Park Landfill	09540009	ON	———	———	132,794	33,198
DND	CAS 8 Wing Building 151 -	09540007	ON	189,930	170,021	273,522	68,381
DND	CAS 8 Wing POL Compound	09540020	ON	19,967	17,874	———	———
DND	CAS 9 Wing - Leitrim Drum Dump Site	00961004	NL	———	———	42,400	10,600
DND	CAS Alert Baker's Dozen	20247035	NU	22,136	19,815	26,700	6,675
DND	CAS Alert Oxidator Building	20247006	NU	22,136	19,815	26,700	6,675
DND	CFAD Bedford Dump Sites (CSites 801, 802, 803 & 820) Risk Mngmt	02859002	NS	15,257	13,658	———	———

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		02859019	NS	11,949	10,697	———	———
DND	CFAD Eastside Peninsula Area (CSite 7402) Remediation	02859031	NS	2,724	2,439	———	———
DND	CFB Esquimalt DY-4 FMF Shops	17403003	BC	———	———	252,000	63,000
DND	CFB Trenton FFTA -	09540012	ON	103,787	92,908	44,335	11,084
DND	CLS CFB Gagetown - Wellington Anti Tank Range	00008409	NB	———	———	19,932	4,983
DND	CLS CFB Kingston PMQ Abandonned Fuel Tanks	00000911	ON	———	———	47,040	11,760
DND	CLS CFB Shilo - Skeet Range	00001001	MB	296,198	265,150	71,562	17,891
DND	CLS Gagetown Old POL Tank Farm (S-319)	04089001	NB	27,269	24,410	47,677	11,919
DND	CLS Meaford CATC Meaford Former Refueling Station #2	10992006	ON	25,737	23,040	———	———
DND	CLS USS Montreal - Champ de tir A (1000 verges) à St-Bruno	00000926	QC	96,094	86,021	———	———
DND	CLS USS Valcartier - Aménagement ancien dépotoir Château	05906047	QC	———	———	306	76
DND	CLS USS Valcartier - Champ de tir du Centre de biathlon	00008402	QC	100,995	90,408	———	———
DND	CLS Valcartier champs de tir aux pigeon d'argile	00008337	QC	218,310	195,426	68,793	17,198
DND	CLS-ASU Shilo Rifle Ranges 3 (small arms)	12439007	MB	———	———	60,813	15,203
DND	CLS-Décontamination des sols de la redoute sud-CMR St-Jean	00008463	QC	11,252	2,821	———	———
DND	CLS-Logements Familiaux CMR Saint-Jean	07070001	QC	24,536	6,134	———	———
DND	CMS Former Amherst Rifle Range (CSite 5403) Remediation	03186001	NS	11,564	10,352	21,590	5,398
DND	CMS Marlant - Contaminated Site Disclosures (1048, 1103, 5554)	00008329	NS	5,221	4,674	———	———
		02860012	NS	2,589	2,318	———	———
		03009013	NS	2,589	2,318	———	———
DND	CMS Marlant - Shearwater Hangar Y (Csite 222B)	02863045	NS	6,745	6,038	10,321	2,580
DND	CMS Marlant - Shearwater Running Track (Csite 237)	02863036	NS	2,108	1,887	39,512	9,878

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DND	CMS Marlant Cambrai Rifle Range	00273001	NL	191,309	171,256	42,790	10,698
DND	CMS-Shearwater Former Dump Site	02863013	NS	———	———	15,602	3,900
		02863014	NS	———	———	10,401	2,600
DND	CMS-Shearwater Site 216 Former Fill Area West of Alpha Taxiway	02863016	NS	———	———	26,200	6,550
DND	Colwood Refuelling Facility	17451007	BC	499,126	446,807	———	———
DND	DCD School CSite 909 Remediation	03044009	NS	253,068	226,541	5,902	1,476
DND	DRDC Atlantic Groundwater Remediation	03013004	NS	———	———	22,636	5,659
DND	Dwyer Hill Training Centre Legacy Range	00008411	ON	1,088	974	———	———
DND	DYE-M Cape Dyer DEW Line	C7026001	NU	27,420,453	0	3,186,245	0
DND	Former POL Storage Area, Naval Annex Dockyard (CSite 1107B) Risk	03009006	NS	70,188	62,831	12,363	3,091
DND	FOX-2 Longstaff Bluff DEW Line -	C7022001	NU	2,176,132	1,948,026	5,759,305	639,923
DND	FOX-3 Dewar Lakes DEW Line	C7023001	NU	3,473,370	3,109,286	6,459,181	717,687
DND	FOX-4 Cape Hooper	C7024001	NU	———	———	1,266,842	316,711
DND	FOX-5 Broughton Island DEW Line	C7025001	NU	52,073	46,614	110,276	12,253
DND	FOX-M Hall Beach DEW Line	C7021001	NU	40,176	35,965	86,804	9,645
DND	Marlant DCD School Site 901	03044001	NS	2,588	2,316	———	———
DND	Marlant Former Firefighter Training Area Site 907, DCD School	03044007	NS	13,776	12,332	20,174	5,043
DND	Marlant Great Village Former AST Remediation	03146001	NS	36,977	33,101	98,786	24,697
DND	MARPAC ESQ-2 Small Boats Float Remediation	00008492	BC	———	———	136,000	34,000
DND	METC Nicolet Building 5 -	06294001	QC	6,241	5,587	5,200	1,300
DND	PIN-2 Cape Young DEW Line	C7013001	NU	2,135,342	1,911,512	6,899,538	1,724,885
DND	PIN-3 Lady Franklin Point DEW Line	C7016001	NU	59,309	53,092	19,707	4,927
DND	PIN-4 Byron Bay DEW Line	C7015001	NU	2,056,745	1,841,155	5,415,762	601,751
DND	Saglek Sediments	N7040001	NL	39,027	34,936	49,503	12,376
DND	Shea Heights/Southside Tank Farm	32044001	NL	31,063	27,807	———	———

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		32044002	NL	24,502	21,934	———	———
DND	Shearwater (CSite 207) - Former USTs at Hangar 3	02863007	NS	26,026	23,298	42,070	10,517
DND	Shearwater (CSite 230)-Buidlings 31,31A,31B,32 (Mobile support)	02863030	NS	6,892	6,170	7,382	1,845
DND	Shearwater CSite 225 - Bldg 14 - Community Res. Centre	02863025	NS	3,787	3,390	———	———
DND	Shirley Road Dump/Landfill	04089010	NB	160,211	143,417	111,918	27,979
DND	Summerside Armoury	02193002	PE	17,097	15,305	———	———
DND	Sydney Underground Storage Tank Removal	N7095001	NS	152,955	152,638	3,597,222	899,305
DND	TCE Contamination Valcartier	29757007	QC	912,836	0	254,378	0
EC	BC Creosote Wood Stave Stilling Wells	00001290	BC	31,533	0	16,748	0
		00001293	BC	31,533	0	15,635	0
		00002565	BC	56,723	0	54,236	0
		00003180	BC	50,512	0	———	———
EC	Columbia Wilmer Marsh Unit	16096079	BC	219,681	0	1,385,330	0
EC	HYDROMETRIC MERCURY STATION - NS	00002628	NS	———	———	14,470	0
EC	HYDROMETRIC MERCURY STN - NB	00002625	NB	———	———	17,115	0
		00002627	NB	———	———	16,543	0
EC	Hydrometric Stations in BC	00001221	BC	4,084	0	———	———
		00001222	BC	4,084	0	———	———
		00001226	BC	4,084	0	———	———
		00001227	BC	4,084	0	———	———
		00001228	BC	4,084	0	———	———
		00001229	BC	4,084	0	———	———
		00001245	BC	4,084	0	———	———
		00001259	BC	4,084	0	———	———
		00001264	BC	4,084	0	———	———
		00001265	BC	4,084	0	———	———
		00002375	BC	4,084	0	———	———
		00002410	BC	4,084	0	———	———
		00002440	BC	4,084	0	———	———

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		00002915	BC	4,084	0	———	———
		00002967	BC	4,084	0	———	———
		00003030	BC	4,084	0	———	———
		00003050	BC	4,084	0	———	———
		00003075	BC	4,084	0	———	———
		00003076	BC	4,084	0	———	———
		00003140	BC	4,084	0	———	———
		00003169	BC	4,084	0	———	———
		00003181	BC	4,084	0	———	———
		00008820	BC	4,084	0	———	———
		00011122	BC	4,084	0	———	———
		00011123	BC	4,084	0	———	———
		00011124	BC	4,084	0	———	———
		00011126	BC	4,084	0	———	———
		00011128	BC	4,084	0	———	———
		00011132	BC	4,084	0	———	———
		00011135	BC	4,084	0	———	———
		00011141	BC	4,084	0	———	———
		00011148	BC	4,084	0	———	———
		00011149	BC	4,084	0	———	———
		00011150	BC	4,084	0	———	———
		00011159	BC	4,084	0	———	———
		00011161	BC	4,084	0	———	———
		00011163	BC	4,084	0	———	———
		00011172	BC	4,084	0	———	———
EC	Hydrometric Stations in ON 2006-07	00002359	ON	———	———	542	0
		00002362	ON	———	———	35,163	0
		00003070	ON	40,447	0	48,325	0
EC	Hydrometric Stations in ON 2007-08	00009831	ON	40,447	0	———	———
		00011374	ON	———	———	40,526	0
		00011375	ON	———	———	32,558	0
		00011421	ON	———	———	31,127	0

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EC	Hydrometric Stations in SK 2007-08	00001321	SK	10,108	0	———	———
		00011384	SK	10,108	0	———	———
		00011526	SK	10,108	0	———	———
EC	Hydrometric Stations in SK 2008-2009	00002343	SK	10,108	0	———	———
EC	Ile Sainte-Marie	00001288	QC	———	———	36,365	0
EC	Iqaluit Building 1082 Rem	00011582	NU	61,440	0	———	———
EC	Lansdowne House (EC)	12204000	ON	———	———	153,761	0
EC	Manitoba Hydrometric Mercury Remediation	00002469	MB	7,492	0	———	———
		00002471	MB	7,492	0	———	———
EC	Sable Island	07610122	NS	———	———	56,215	0
EC	Sable Island Upper Air Station	00011531	NS	16,064	0	8,802	0
		00011532	NS	16,064	0	———	———
		00011533	NS	16,064	0	8,802	0
		00011534	NS	16,064	0	8,802	0
		00011535	NS	16,064	0	———	———
HC	Moose Factory Hospital	11789001	ON	113,000	0	———	———
HC	Remediation of Shamattawa Nursing Station	58145001	MB	12,935	0	———	———
JCCBI	Projet pilote Parcelle 3	00002327	QC	90,000	0	———	———
NCC	Bayview Remediation	00022831	ON	34,336	0	35,000	0
NCC	Central West LeBreton	00023983	ON	———	———	223,615	0
NCC	Hurdman_North	00022822	ON	24,419	0	40,000	0
NCC	LeBreton East - Richmond Landing	00023316	ON	———	———	386,830	0
NCC	Ridge Road Landfill	00000001	ON	423,339	0	225,000	0
NCC	Riverfront Park	00000016	ON	300,000	0	126,147	0
NCC	Stanley Park	00000002	ON	255,880	0	———	———
		00022854	ON	44,120	0	255,074	0
		00022858	ON	———	———	218,230	0
		00022892	ON	———	———	560,854	0
NRC	Biotechnology Research Institute	00000909	QC	2,305,947	0	1,502,446	0

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NRC	Center for Surface Transportation Technology-RM	00024055	ON	———	———	29,642	0
		00024306	ON	———	———	169,866	0
		00024307	ON	———	———	80,000	0
NRC	Dominion Radio Astrophysical Observatory	00000907	BC	6,625	0	128,897	0
NRC	Dominion Radio Astrophysical Observatory -Slag pile & other APEC	00024308	BC	———	———	98,300	0
NRCan	Booth Street Complex Remediation	00023387	ON	———	———	1,975,340	0
		58479001	ON	333,096	0	1,715,580	0
		58479002	ON	———	———	1,943,616	0
		58479003	ON	———	———	1,943,616	0
		58480001	ON	2,831,475	0	216,224	0
		58480002	ON	2,831,475	0	216,224	0
NRCan	Metis-sur-Mer Remediation	00012921	QC	———	———	59,777	0
NRCan	Polar Continental Shelf Project, Tuktoyaktuk, Remediation	00008314	NT	100,000	0	885,613	0
PC	B1 Trade Waste Pit	15412015	AB	———	———	14,439	0
PC	Bar U NHS Waste Disposal Middens Remediation	56488004	AB	8,914	0	1,253	0
		56488005	AB	5,054	0	1,253	0
PC	Battle of the Restigouche NHS - Assainissement du site Listuguj	00007600	QC	7,500	0	166,500	0
PC	C2 JNP Tangle Creek Compound	15412017	AB	———	———	19,048	0
PC	Canal Lachine LHN - Assainissement site 12.2	06959006	QC	301,076	0	3,459	0
PC	Canal Lachine LHN - Assainissement site 13.2	06959081	QC	559,511	0	———	———
PC	Canal Lachine LHN - Enlèvement des haut fonds	06959001	QC	189,135	0	2,212	0
PC	Canal Lachine LHN - Site 1.2 Promenade Père-Marquette	06959036	QC	———	———	228,109	0
PC	Canal Lachine LHN - site 1.2.1 secteur résidentiel	00023376	QC	243,935	0	531,569	0
PC	Canal Lachine LHN - site 14.3 secteur Tri-postal	06959084	QC	———	———	1,651,373	0
PC	Canal Lachine LHN - sites 3.1, 13.3, 13.8, 14.1.1	06959019	QC	17,623	0		

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PC	Canal Lachine LHN Restauration Pôle Atwater Piste Polyvalente	06959009	QC	———	———	19,748	0
		06959011	QC	———	———	19,748	0
		06959014	QC	———	———	19,748	0
		06959017	QC	———	———	19,748	0
		06959034	QC	———	———	19,748	0
		06959076	QC	———	———	19,748	0
		06959080	QC	———	———	19,748	0
		06959082	QC	———	———	19,748	0
		06959085	QC	———	———	19,748	0
		06959086	QC	———	———	19,748	0
		06959089	QC	———	———	19,748	0
PC	Cape Breton Highlands NP - Broad Cove Incinerator Remediation	03842008	NS	371	0	66,983	0
PC	Cape Breton Highlands NP - Former Jerome Mountain Incinerator	03842003	NS	62,950	0	1,492	0
PC	Cape Breton Highlands NP - Former North Mountain Waste Site	03842001	NS	41,588	0	1,130	0
PC	Cape Breton Highlands NP - Ingonish Compound Remediation	03842004	NS	185,025	0	735,204	0
PC	Cape Breton Highlands NP - Marrach Landfill Remediation	03842006	NS	11,514	0	———	———
PC	Cartier-Brébeuf LHN - Assainissement Secteur est	00023389	QC	60,978	0	———	———
PC	Cartier-Brébeuf LHN - Assainissement Secteur ouest	05828001	QC	33,600	0	———	———
PC	Elk Island NP - Garage Outflow Pipe Remediation	15457009	AB	54,403	0	8,741	0
PC	Elk Island NP - Old Maintenance Compound Trade Waste Landfill	15457002	AB	———	———	23,011	0
PC	Forillon Assainissement du garage des atelier	00023467	QC	———	———	6,499	0
PC	Former McNabs Petroleum Handling and Storage Area Remediation	32086001	NS	1,399,626	0	158,098	0
PC	Fortress of Louisbourg NHS - Former Military Dump Havenside	03640005	NS	371	0	34,167	0

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PC	Fortress of Louisbourg NHS - Works Compound Remediation	03640006	NS	———	———	242,051	0
PC	Glacier NP - Remediation of Illecilewaet Campground	00024128	BC	———	———	29,341	0
PC	Glacier NP - Rogers Pass Maintenance Compound Remediation	18752001	BC	———	———	89,980	0
PC	Glacier NP - Rogers Pass West Remediation	00022913	BC	45,737	0	911,668	0
PC	Gold Room at Bear Creek NHS - Bear Creek Compound Remediation	20009001	YT	———	———	339,358	0
PC	Grasslands NP - Remediation	00024052	SK	63,223	0	32,272	0
PC	Grosse-Île LHN - Assainissement du site GI-02	56522002	QC	305,926	0	142,325	0
PC	Gulf Islands NP - Intertidal monitoring at Light Stations	00023457	BC	375	0	2,990	0
		00023458	BC	375	0	———	———
		00023459	BC	375	0	———	———
		00023460	BC	375	0	———	———
		00023461	BC	375	0	400	0
		00023462	BC	375	0	985	0
		00023463	BC	375	0	600	0
PC	Gulf Islands NP – Russell Island Fuel Shed, Soil Remediation	00024299	BC	———	———	48,750	0
PC	Gwaii Haanas NMCAR – Harriet Harbour Remediation	00024667	BC	———	———	48,055	0
PC	Ivvavik NP - Sheep Creek Fuel Spill Remediation	20033002	YT	33,163	0	66,124	0
PC	Ivvavik NP - Stokes Point Bar B Remediation	20033001	YT	250,127	0	3,756,902	0
PC	Jasper NP - Brewster Chalet Remediation	00023482	AB	46,566	0	25,083	0
PC	Jasper NP - Groundwater Monitoring Remediation	15412001	AB	———	———	111,533	0
PC	Jasper NP – Remediation of Maligne Lake Warden Station	00008325	AB	43,818	0	28,617	0
PC	Jasper NP - Sleepy Hollow Road Waste Disposal Remediation	15412012	AB	26,177	0	121,759	0
PC	Kootenay NP - 16 Mile Pit Remediation	00012834	BC	———	———	89,505	0

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PC	Pacific Rim NP - Former Long Beach Service Station Remediation	17800017	BC	86,676	0	———	———
PC	Pacific Rim NP - Former Site of the Port Renfrew Motel	00012850	BC	100,300	0	7,135	0
PC	Pacific Rim NP - Prideaux Island Dump Site Remediation	17800015	BC	84,264	0	———	———
PC	PM Saguenay Saint-Laurent assainissement de Cap-de-Bon-Désir	N0271001	QC	———	———	11,489	0
PC	Prince Albert NP – Remediation of Lobstick Maintenance Compound	14567002	SK	———	———	29,341	0
PC	Quttinirpaaq NP - Lake Hazen Warden Station Remediation	56482014	NU	23,353	0	———	———
PC	Quttinirpaaq NP - Remediation of Fort Conger	00008328	NU	———	———	117,466	0
PC	Quttinirpaaq NP - Remediation of Ward Hunt	56482015	NU	208,040	0	29,956	0
PC	Quttinirpaaq NP - Tanquary Fiord Remediation	56482016	NU	5,745	0		
		56482017	NU	5,745	0		
		56482018	NU	5,745	0		
PC	Rideau Canal NHS – Kingston Inner Harbour Remediation	00023391	ON	———	———	14,320	0
PC	Riding Mountain NP - Golf Course Maintenance Yard	12897008	MB	780,364	0	629,608	0
PC	Riding Mountain NP - Maintenance Compound Garage, Former UST	12897002	MB	21,196	0	4,713	0
PC	Riding Mountain NP - Mount Agassiz Remediation	00023456	MB	———	———	129,699	0
PC	Riding Mountain NP - Townsite Washroom Former UST Remediation	12897004	MB	———	———	645,667	0
PC	Terra Nova NP – Remediation of Sandy Pond Boardwalk Site	00024576	NL	———	———	856,386	0
PC	Terra Nova NP – Remediation of Sandy Pond Day Use Area	00024292	NL	141,885	0	35,999	0
PC	Torngat Mountains NP - Remediation	00024581	NL	———	———	62,070	0
		00024582	NL	———	———	62,070	0

Dept	FCSAP Project Name	FCSI #	Province / Territory	2009–2010		2010–2011	
				Total FCSAP Expenditures ($)	Custodian Expenditures ($)	Total FCSAP Expenditures ($)	Custodian Expenditures ($)
PC	Torngat Mountains NP – Upper Kangalaksiorvik Lakes Remediation	00023472	NL	———	———	5,000	0
PC	Wood Buffalo NP - Hay Camp Remediation	15841001	AB	76,704	0	153,176	0
PC	Yoho NP - Emerald Intersection Remediation	18730016	BC	———	———	71,965	0
PWGSC	Alaska Highway - Fireside Maintenance Camp R/RM	09401080	BC	109,201	0	109,558	0
PWGSC	Alaska Highway - Fort Nelson Gravel Pit R/RM	09401030	BC	52,478	0	27,235	0
PWGSC	Alaska Highway - Iron Creek Maintenance Camp	09401090	YT	389,788	0	169,118	0
PWGSC	Alaska Highway - Liard River Maintenance Camp R/RM	09401070	BC	769,425	0	496,324	0
PWGSC	Alaska Highway - Muncho Lake Maintenance Camp R/RM	09401060	BC	59,894	0	113,081	0
PWGSC	Alaska Highway - Sikanni Maintenance Camp R/RM	09401020	BC	69,992	0	301,483	0
PWGSC	Alaska Highway - Steamboat Maintenance Camp R/RM	09401040	BC	128,724	0	63,953	0
PWGSC	Alaska Highway - Toad Maintenance Camp - R/RM	09401050	BC	251,782	0	321,443	0
PWGSC	Alaska Highway - Wonowon Maintenance Camp R/RM	09401010	BC	59,871	0	106,870	0
PWGSC	Argentia PCB Remediation	55793016	NL	———	———	1,240,701	0
		55793017	NL	———	———	106,931	0
PWGSC	Atlin Unused Lot Remediation	19881001	BC	179,829	0	170,297	0
PWGSC	Esquimalt Graving Dock Uplands - Risk Management	17410001	BC	24,627	119,391	511,960	0
		17410002	BC	164,721	0	333,957	0
		17410004	BC	244,221	0	498,419	0
		17410005	BC	217,160	0	181,240	0
		17410006	BC	67,945	0	46,304	0
		17410008	BC	56,631	0	34,289	0
		17410009	BC	5,106	0	———	———
PWGSC	Esquimalt Graving Dock Waterlot - Risk Management	17410007	BC	2,111,361	0	2,999,603	0
PWGSC	New Westminster Railway Bridge South Approach - Risk Management	17026001	BC	152,421	0	109,975	0

Dept	FCSAP Project Name	FCSI #	Province / Territory	2009–2010		2010–2011	
				Total FCSAP Expenditures ($)	Custodian Expenditures ($)	Total FCSAP Expenditures ($)	Custodian Expenditures ($)
PWGSC	Old Alaska Highway Mile 245 Unused Land, Prophet River R/RM	22208001	BC	———	———	322,407	0
PWGSC	Penhold Transmitter Bunker MPES	53673001	AB	60,376	0	122,689	30,000
PWGSC	Pointe-Shea, Havre-Aubert	09491001	QC	———	———	63,319	0
PWGSC	Taxation Centre	22403001	NL	20,639	0	———	———
PWGSC	Vancouver Standards Building - Risk Management	16953001	BC	71,265	29,368	58,143	0
PWGSC	Vanier Park, Kitsilano Remediation/Risk Management	16879001	BC	224,153	0	74,464	0
RCMP	Beaver Creek Detachment	20190016	YT	———	———	162,993	0
RCMP	Burgeo RCMP	00001152	NL	40,053	0	———	———
RCMP	Cape Dorset RCMP Detachment Site	00001070	NU	———	———	36,483	0
RCMP	Carcross RCMP	23322017	YT	1,320,130	0	160,943	0
RCMP	Contaminated Site 00013518	00013518	NL	———	———	4,500	0
RCMP	Depot RCMP Former Firing Range Site	13672001	SK	619,434	0	———	———
RCMP	Fort McPherson RCMP Detachment Site	00001067	NT	———	———	66,953	0
RCMP	Fort Providence RCMP Detachment Site	20991001	NT	22,426	0	20,524	0
RCMP	Holman Island RCMP Detachment Site	00001068	NT	———	———	10,115	0
RCMP	Iqaluit RCMP	00022298	NU	———	———	163,665	0
RCMP	Island Lake RCMP Detachment Site	00001056	MB	———	———	21,321	0
RCMP	Lac-Mégantic RCMP	00001047	QC	15,000	0	———	———
RCMP	Lutselk'e RCMP Detachment Site	00001061	NT	———	———	10,115	0
RCMP	Nain RCMP	00001138	NL	232,915	0	153,346	0
RCMP	Nelson RCMP	32073018	BC	———	———	5,283	0
RCMP	Port Saunders RCMP	00001110	NL	13,787	0	———	———
RCMP	Rankin Inlet RCMP Detachment Site	00001071	NU	———	———	10,115	0
RCMP	Rocky Harbour RCMP	00001147	NL	5,000	0	———	———
RCMP	Rocky Harbour RCMP	00001149	NL	25,918	0	———	———
RCMP	Tulita (Fort Norman) RCMP Detachment Site	00001066	NT	———	———	356,455	0
RCMP	Whitbourne RCMP	00001145	NL	17,662	0	———	———

Dept	FCSAP Project Name	FCSI #	Province / Territory	2009–2010		2010–2011	
				Total FCSAP Expenditures ($)	Custodian Expenditures ($)	Total FCSAP Expenditures ($)	Custodian Expenditures ($)
TC	Bushell Public Port Facility Remediation	14886001	SK	98,765	0	3,652	0
TC	Cambridge Bay Shoreline Site	00024290	NU	———	———	10,112	0
TC	Décontamination – Terrains excédentaires . Villlage de Kuujjuaq	08389003	QC	38,472	0	105,806	0
TC	Edmonton International Airport	15473005	AB	———	———	914,200	0
TC	Étude de faisabilité -Sédiments contaminés du quai de Gaspé	72064003	QC	161,100	0	225,029	0
TC	Former Coyle Yard Remediation Project	10352003	ON	406,507	0	7,924	0
TC	Former Remote Radar Site 59	00967059	NL	22,452	0	18,102	0
TC	Former Seaway Property - St. Catharines, Ontario	10352005	ON	226,592	0	3,585,080	0
TC	Fort Nelson Airport Environmental Remediation	N0025001	BC	4,566,460	0	6,440,191	0
TC	Gander - Site 16	00967016	NL	140,563	0	184,849	0
TC	Gander Site 43 R/RM	00967043	NL	———	———	396,215	0
TC	Grande Prairie Landfill Remediation	N0137003	AB	———	———	1,248,942	0
TC	Halifax FTA Remediation	03057001	NS	———	———	1,144,692	0
TC	Inuvik Fire Training Area Remediation	N0014002	NT	———	———	166,408	0
TC	London FTA Remediation	10855002	ON	———	———	128,658	0
TC	Lyon's Creek West Free Product	10352006	ON	20,924	0	620,312	0
TC	Lyon's Creek West PCB Remediation	10352004	ON	48,056	0	123,220	0
TC	Marine Atlantic Ferry Terminals	00723001	NL	150,408	0	34,443	0
		03765001	NL	149,811	0	22,235	0
		67197001	NL	118,045	0	35,394	0
TC	Middle Harbour Fill Site Remediation Project	17348003	BC	———	———	645,934	0
TC	Nitchequon	N0285001	QC	———	———	46,585	0
TC	Norman Wells Taxiway C	00024131	NT	———	———	145,678	0
TC	Oshawa Harbour Risk Management / Remediation	67590001	ON	———	———	1,378,353	0
		67590004	ON	———	———	119,941	0
		67590005	ON	———	———	1,015,734	0

Dept	FCSAP Project Name	FCSI #	Province / Territory	2009–2010		2010–2011	
				Total FCSAP Expenditures ($)	Custodian Expenditures ($)	Total FCSAP Expenditures ($)	Custodian Expenditures ($)
TC	Port of Churchill Wharf Remediation & Investigation	N0240001	MB	195,735	0	48,567	0
TC	Prince Rupert Powerhouse Remediation	N0028003	BC	70,817	0	———	———
TC	Remediate Helicopter Site	00670002	NL	10,995	0	———	———
TC	Remediate Marine Fire Training Area	00339015	NL	23,486	0	66,412	0
TC	Remediate Soil and Groundwater at FTA	00339002	NL	139,581	0	98,150	0
TC	Resolute Bay Landfills Remediation/Risk Mgmt	N0017003	NU	45,816	0	———	———
TC	Rock Bay	17348008	BC	1,834,889	0	995,775	0
TC	Smithers Airport - Former Dumpsite	N0030002	BC	38,535	0	31,777	0
TC	Stabilisation par enrochement de l'approche du quai à Mont-Louis	30458001	QC	———	———	949,762	0
TC	Stephenville Solid Waste Dump R/RM	N0002002	NL	———	———	54,578	0
TC	Thetis Cove Fill Site Remediation	17415002	BC	658,104	0	3,286	0
TC	Thunder Bay FTA Remediation	11943001	ON	———	———	114,452	0
TC	Tofino Airport - Creek A	N0032006	BC	63,047	0	———	———
TC	Tofino Dumpsite G Remediation	N0032002	BC	12,482	0	111,939	0
TC	Tofino EBS Remediation	N0032003	BC	12,482	0	———	———
		N0032004	BC	12,482	0	———	———
		N0032005	BC	26,707	0	20,640	0
TC	Victoria Harbour Floor Risk Management/Remediation Project	17348020	BC	499,797	0	1,194,854	0
TC	Watson Lake Landfill Capping	N0281001	YT	14,274	0	277,188	0
		N0281003	YT	14,274	0	307,435	0
		N0281005	YT	14,274	0	———	———
		N0281023	YT	14,259	0	———	———
TC	Watson Lake Remediation	N0281002	YT	300,557	0	———	———
		N0281009	YT	100	0	944,264	0
		N0281011	YT	1,675,394	0	314,822	0
TC	Whitehorse AEC 5	20146013	YT	860,695	0	228,792	0

APPENDIX D

Federal Contaminated Sites Environmental Liability

FEDERAL CONTAMINATED SITES ENVIRONMENTAL LIABILITY

Each year, financial information, including the overall environmental liability and contingent liability for federal contaminated sites, is reported to Public Accounts of Canada. In the Public Accounts, total environmental liability includes the estimated costs for the

- management and remediation of contaminated sites and sites affected by unexploded explosive ordnance; and
- decommissioning of Atomic Energy of Canada Limited's nuclear facilities.

For contaminated sites, a liability is accrued and an expense is recorded when the contamination occurs or when the Government becomes aware of the contamination and is obliged to incur these costs. A contingent liability occurs when a future event confirms that a liability was incurred at the financial reporting date and the amount can be estimated.[12]

The recording of environmental liabilities is required under sections 63, 64 and 65 of the Financial Administration Act.[13] The Directive on Contingencies addresses the requirement under the Financial Administration Act to include the Government's contingent liabilities in Public Accounts of Canada. Additional guidance was released by TBS in December 2010 in Remediation Liabilities Related to Contaminated Sites: A Supplement to the Financial Information Strategy (FIS) Manual.

According to TBS guidance, a liability for the remediation of contaminated sites is recognized at the financial reporting date when the following applies:

- An environmental standard exists
- Contamination exceeds the environmental standard
- The government
    - owns the land; or
    - is directly responsible for the land; or
    - accepts responsibility (when there is little, if any, discretion to avoid the obligation)
- It is expected that future economic benefits will be given up
- A reasonable estimate of the amount can be made

An obligation for the remediation of contaminated sites cannot be recognized as a liability unless all criteria are satisfied.[14]

12. TBS – Remediation Liabilities Related to Contaminated Sites: A Supplement to the Financial Information Strategy (FIS) Manual http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=20888&section=text
13. http://laws-lois.justice.gc.ca/eng/acts/F-11/page-31.html#h-17
14. Remediation Liabilities Related to Contaminated Sites: A Supplement to the Financial Information Strategy (FIS) Manual (TBS, December 2010)

Table D.1: Adjusted Total Environmental Liability for Contaminated Sites, 2009–2011 ($)

	March 31, 2009	March 31, 2010	March 31,2011
Total liability for remediation of contaminated sites	3,220,052,777	3,493,060,213	4,354,071,475
Less:			
Sydney Tar Ponds	255,556,735	216,193,046	173,575,932
Low Level Radioactive Waste Area Initiative	333,438,762	339,648,200	1,105,270,970
Cape Breton Development Corporation	192,170,000	147,476,000	129,887,000
Canadian Broadcasting Corporation	--	--	$300,000
VIA Rail Canada Inc.	1,416,000	1,687,000	1,627,000
Adjusted total liability for contaminated sites	2,437,471,280	2,788,055,967	2,943,410,573

Table D.2: Federal Custodians Participating in FCSAP – Environmental Liability for Contaminated Sites, 2009–2010 ($)

	March 31, 2009	March 31, 2010	Difference
Aboriginal Affairs and Northern Development Canada	1,571,348,105	1,901,998,175	330,650,070
Agriculture and Agri-Food Canada	1,237,877	1,358,938	121,061
Canada Border Services Agency	361,800	291,800	-70,000
Correctional Service of Canada	13,492,696	9,176,768	-4,315,928
Environment Canada	56,268,622	88,795,353	32,526,731
Fisheries and Oceans Canada	70,454,782	73,175,003	2,720,221
Health Canada	1,505,750	90,200	-1,415,550
Jacques Cartier and Champlain Bridges Incorporated	1,000,000	1,000,000	--
Department of National Defence	365,214,806	331,776,208	-33,438,598
National Capital Commission	29,863,000	39,339,000	9,476,000
Natural Resources Canada[1]	25,977,413	10,300,000	-15,677,413
Parks Canada	57,371,037	62,193,172	4,822,135
Public Works and Government Services Canada[2]	34,075,124	116,377,194	82,302,070
Royal Canadian Mounted Police	7,375,678	3,757,132	-3,618,546
Transport Canada	197,684,580	146,546,829	-51,137,751

Notes:
1. Does not include liability for the Low Level Radioactive Waste Area Initiative as this is not part of FCSAP
2. Does not include liability for the Sydney Tar Ponds as this is not part of FCSAP

Table D.3: Federal Custodians Participating in FCSAP — Environmental Liability for Contaminated Sites, 2010–2011 ($)

	March 31, 2010	March 31, 2011	Difference
Aboriginal Affairs and Northern Development Canada	1,901,998,175	2,015,473,705	113,475,530
Agriculture and Agri-Food Canada	1,358,938	1,461,817	102,879
Canada Border Services Agency	291,800	2,285,800	1,994,000
Correctional Service of Canada	9,176,768	9,244,357	67,589
Environment Canada	88,795,353	99,886,464	11,091,111
Fisheries and Oceans Canada	73,175,003	108,698,513	35,523,510
Health Canada	90,200	225,000	134,800
Jacques Cartier and Champlain Bridges Incorporated	1,000,000	1,000,000	--
Department of National Defence	331,776,208	325,455,667	-6,320,541
National Capital Commission	39,339,000	45,657,000	6,318,000
Natural Resources Canada[1]	10,300,000	1,090,036	-9,209,964
Parks Canada	62,193,172	24,540,488	-37,652,684
Public Works and Government Services Canada[2]	116,377,194	142,589,113	26,211,919
Royal Canadian Mounted Police	3,757,132	4,044,525	287,393
Transport Canada	146,546,829	164,678,256	18,131,427

Notes:
1. Does not include liability for the Low Level Radioactive Waste Area Initiative as this is not part of FCSAP
2. Does not include liability for the Sydney Tar Ponds as this is not part of FCSAP.

Table D.4: Changes in Liability for Remediation of Contaminated Sites, 2009–2011 ($)

	March 31, 2009	March 31, 2010	March 31, 2011
Opening balance	3,332,727,858	3,220,052,777	3,493,060,213
Less: Expenditures reducing opening liabilities	220,900,966	307,966,826	366,429,461
Add: Changes in estimated remediation costs	24,003,543	441,294,743	1,100,787,486
Add: New liability for sites not previously recorded	84,222,342	139,679,519	126,653,234
Closing balance	3,220,052,777	3,493,060,213	4,354,071,472