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Canada

Federal Contaminated Sites Action Plan (FCSAP)

ANNUAL REPORT (2011-2012)

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Faro Mine, Yukon

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Federal Contaminated Sites Action Plan: 2011–2012 Annual Report

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EXECUTIVE SUMMARY

Established by the Government of Canada in 2005, the Federal Contaminated Sites Action Plan (FCSAP) is a 15-year, $4.2-billion program. Its primary objective is to reduce environmental and human-health risks and the related financial liabilities associated with federal contaminated sites.

In Phase I of FCSAP (2005–2011), the federal departments, agencies and consolidated Crown corporations that have roles as custodians of federal sites made significant progress in addressing contamination. FCSAP Phase II was approved in 2011–2012 to continue this work for five years, with a focus on the remediation of the highest-priority sites. A third phase is planned for 2016–2020. This report describes the progress made in 2011–2012, the first year of Phase II.

Nationally, federal departments involved in FCSAP reported total expenditures of $230 million in 2011–2012. This includes $15 million spent on assessments, $194 million spent on the remediation and risk-management of federal contaminated sites, and $21 million for program management activities. In this year, the program achieved several results:

- Custodians conducted assessments at 849 sites to characterize environmental conditions; of the 141 sites that were fully assessed, 26% required remediation or risk-management, while 74% required no further action, as they pose no significant risk.
- Custodians conducted remediation and risk-management activities at 408 sites; at 43 of these, they completed the remediation process, generating improvements in environmental quality and reduction of federal financial liability.
- Approximately 1,085 jobs were created, with an estimated 5.2 direct jobs created for every million dollars spent on FCSAP projects.

These results are reflected in the Federal Contaminated Sites Inventory (FCSI), which is maintained by the Treasury Board of Canada Secretariat. At the end of 2011–2012, the FCSI listed approximately 22,200 sites. A comparison of FCSI data in 2010–2011 and 2011–2012 shows that the number of sites suspected of contamination decreased by 29% during this period. There was also a 7% decrease in the number of active sites and a 37% increase in the number of closed sites, where no further action was required. Approximately 83% of expenditures reported to the FCSI in 2011–2012 were attributed to FCSAP, as not all federal contaminated sites are part of the program.

Contamination of federal sites may translate into liability for the Government of Canada, when appropriate accounting criteria are met. The total liability for the remediation of contaminated sites increased by $419 million to $4.773B during 2011–2012. Adjusted liability, an estimate of the liability for sites eligible for FCSAP funding, increased by $472 million to $3.416 billion during 2011–2012. Total liability for FCSAP-eligible sites will likely decline in future years, as custodians add fewer new sites to the federal inventory and remediate more existing sites.

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ABBREVIATIONS AND ACRONYMS

AAFC	Agriculture and Agri-Food Canada
AANDC	Aboriginal Affairs and Northern Development Canada
ADM	Assistant Deputy Minister
CCME	Canadian Council of Ministers of the Environment
CSC	Correctional Service of Canada
DFO	Fisheries and Oceans Canada
DG	Director General
DND	Department of National Defence
EC	Environment Canada
ESA	Environmental site assessment
FCSAP	Federal Contaminated Sites Action Plan
FCSI	Federal Contaminated Sites Inventory
HC	Health Canada
HSC	Highest step completed
JCCBI	Jacques Cartier and Champlain Bridges Incorporated
LED	Lands and Economic Development
NAO	Northern Affairs Organization
NCC	National Capital Commission
NCSCS	National Classification System for Contaminated Sites
NRC	National Research Council
NRCan	Natural Resources Canada
NWA	National Wildlife Area
PCA	Parks Canada Agency
PCB	Polychlorinated biphenyl
PWGSC	Public Works and Government Services Canada
RCMP	Royal Canadian Mounted Police
R/RM	Remediation / Risk-Management
TBS	Treasury Board of Canada Secretariat
TC	Transport Canada
VOC	Volatile organic compound

1 INTRODUCTION

The Federal Contaminated Sites Action Plan (FCSAP) is a $4.2-billion, 15-year program introduced by the Government of Canada in 2005. Its goal is to reduce environmental and human-health risks posed by the highest-priority federal contaminated sites, along with the associated federal financial liabilities. Custodians of these sites – including federal departments, agencies and consolidated Crown corporations – share costs with FCSAP.

Federal contaminated sites are located on land or aquatic areas owned or leased by the federal government, or where the federal government has accepted responsibility for the contamination. FCSAP projects on federal properties include remediation and risk-management of contaminants in harbours and ports, military bases, airports, lighthouses, school facilities and fuel storage tanks on reserve land, and abandoned mines.

The program provides a consistent approach to dealing with contamination, which is most often a result of past activities that had environmental consequences that were not well understood at the time. Before FCSAP, federal departments and agencies spent up to $100 million annually to remediate or manage risks associated with contaminated sites. From the start of the program in 2005 to April 2012, $1.8 billion, including the custodian cost-share, has been spent on assessment, remediation and program management activities.

FCSAP objective

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 sites[2], if the activities that caused the contamination occurred before April 1, 1998:

- **Class 1:** sites where there is a high priority for action or where action is required.
- **Class 2:** sites where there is a medium priority for action or where action is likely required. To be eligible for funding in Phase II, Class 2 sites must have spent FCSAP remediation expenditures before April 1, 2011

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."

1. Terrestrial sites are classified in accordance with 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 in accordance with the FCSAP Aquatic Sites Classification System (2012).

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

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

This report presents FCSAP results and achievements from 2011–2012, which was the first year of Phase II. Building on the progress made in Phase I (2005–2011), Phase II will run until 2015–2016 and focuses on the remediation of the highest-priority sites.

For more information on FCSAP, visit www.federalcontaminatedsites.gc.ca.


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2 PROGRAM RESULTS (2011-2012)

This section describes the achievements of the 16 custodian departments that conducted assessment and remediation activities in 2011-2012. It also compares program progress against performance measurement targets established for Phase II.

The Federal Contaminated Sites Action Plan (FCSAP) Secretariat worked with the Treasury Board of Canada Secretariat and custodians to establish performance indicators, along with both three- and five-year targets, to assess the performance of FCSAP against the program objective. The Federal Contaminated Sites Director General Steering Committee then approved these indicators and targets.

The indicators and targets, identified in the FCSAP performance measurement strategy, fall into three key areas:

1. assessment,
2. risk reduction, and
3. liability reduction

Overview of Program Results

2011–2012

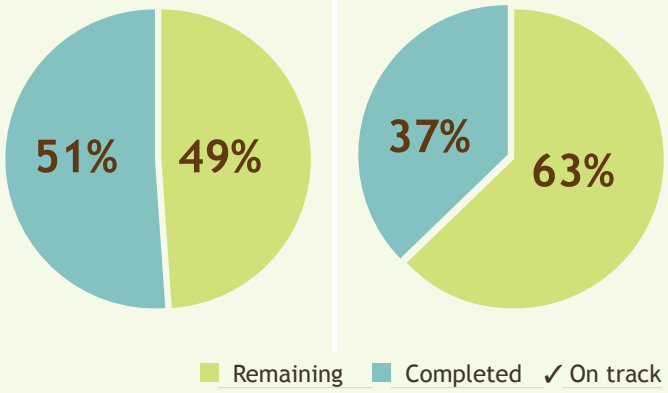
- Assessment activities on 849 sites cost $15 million, including the custodian share of the cost. Of the 190 sites that were fully assessed, 26% required remediation or risk-management, while 74% required no further action.
- Remediation and risk-management activities on 408 sites cost $194 million, including the custodian share of the cost. Custodians completed remediation activities on 43 of these sites.
- Adjusted liability, an estimate of liability for contaminated sites eligible for FCSAP, increased by $472 million from 2010–2011 to 2011–2012.

2.1 ASSESSMENT

Past activities, such as the placement of fuel-storage tanks that may have leaked, can lead custodians to suspect that a site is contaminated. The custodian can then undertake an environmental site assessment on a suspected site which can determine the nature and extent of contamination, and whether remediation or risk-management activities are required at the site. In 2011-2012, FCSAP-funded assessment activities took place on 849 sites at a program cost of $10.5 million; custodians spent an additional $4.6 million as per the FCSAP cost-sharing requirement. After the first year of Phase II, custodians are on track to meet both the three- and five-year performance targets, as shown in Table 1.

Table 1: Performance indicator 1: first immediate outcome

Performance indicator	Result (as of 2011-2012)	Three-year target (2011-2012 to 2013-2014)	Five-year target (2011-2012 to 2015-2016)
Number of sites where FCSAP-funded assessments are being conducted	849 sites	1650 sites	2300 sites

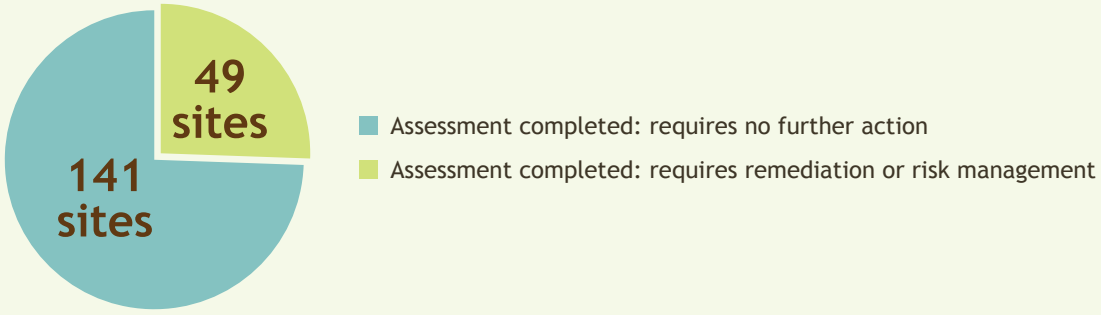


An environmental site assessment typically involves taking samples and testing for levels of contaminants above the environmental quality guidelines. The Canadian Council of Ministers of the Environment (CCME) has published environmental quality guidelines on the management contaminants in soils, sediments, and water (freshwater and marine)[3]. In cases where the risk of contamination is low, the custodian can set a low priority for future action, or decide that the site does not require remediation. Where there is no unacceptable risk, the custodian can close the site. To ensure that custodians take a common approach to managing federal contaminated sites, FCSAP follows a 10-step process, set out in *A Federal Approach to Contaminated Sites*. For more information on the federal approach to managing contaminated sites, see Appendix B.

Of the 849 sites where assessments took place, 190 sites completed the assessment process, while 659 sites required more assessment work to adequately characterize the risk that contaminants posed.

Figure 1 shows the results of completed site assessments. Of these number of sites, 141 (74%) required no further action and 49 (26%) required remediation or risk management. These results are consistent with the trend observed during FCSAP Phase I, that most sites that are assessed do not require remediation.

Figure 1: Results of assessments (2011-2012)



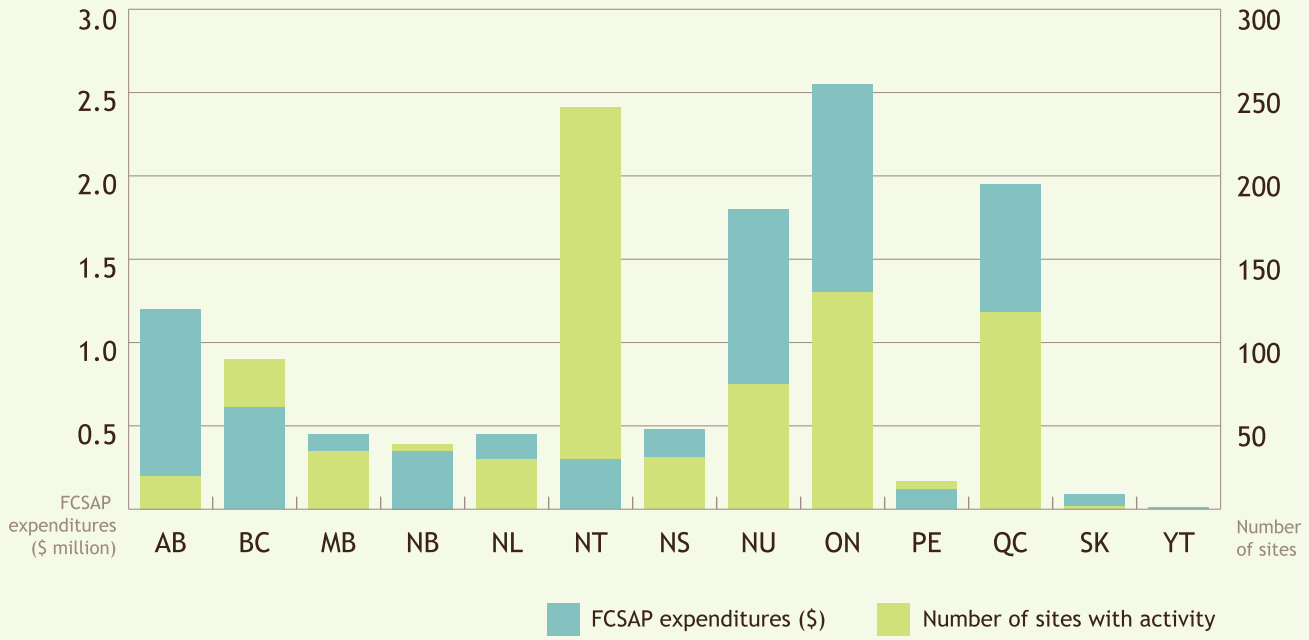
3. http://www.ccme.ca/publications

Table C.1 in Appendix C provides a detailed breakdown of each custodian's number of active assessment sites, available assessment funding, and assessment expenditures.

The three custodians that spent the most on assessments are the Department of National Defence (DND),the Department of Fisheries and Oceans (DFO), and Aboriginal Affairs and Northern Development Canada's Northern Affairs Organization (AANDC-NAO), totalling $6.8 million, which represents 65% of all FCSAP assessment expenditures by the 16 custodian departments. This reflects the large portfolios of sites under the responsibility of these departments. DFO conducted more than half of all FCSAP-funded site assessments (434 of 849) in 2011–2012. However, DFO sites are small in scale as their real property portfolio represents lighthouses, marine navigational sites, etc.

As shown in Figure 2, the greatest expenditures occurred in Ontario, Quebec, and Nunavut, accounting for approximately 60% of total expenditures, while the most sites assessed were in the Northwest Territories (nearly twice as many sites than in any other province or territory).

Figure 2: Distribution of FCSAP assessment expenditures and activity, by province or territory



CASE STUDY

WILMER MARSH REMEDIATION PROJECT

Location: Columbia National Wildlife Area, British Columbia
Custodian: Environment Canada

The Wilmer Marsh Unit of the Columbia National Wildlife Area (NWA) is located 5 km south of Radium, BC. Wilmer Marsh is managed by the Canadian Wildlife Service to ensure that the area is maintained as a healthy ecosystem for fish, birds and wildlife. For decades, the area was used as an unauthorized dumpsite – leading to an accumulation of automobile bodies and parts, heating-oil tanks, tires, paint cans, building debris, and household waste.

Environmental site assessments revealed that the dumping had caused soil and sediment contamination with heavy metals, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons. Human-health and ecological-risk assessments determined that debris removal would be needed to minimize the risks, as would the removal of contaminated soil and sediment in and adjacent to the marsh.

In 2011–2012, a project team removed 1,500 m^3 of scattered and piled debris from across the uplands portion of the site. The team also moved a large crane to the site to remove several car bodies and pieces from the steep gullies overlooking the marsh. Upon completion of the work, the team improved the fencing at the site, to limit unauthorized access.

The remediation presented several logistical, health and safety, and technical challenges:

- Sensitive ecological conditions of the site limited the types of remediation that could be carried out.
- To allow the crane to pull the cars up through the trees, site professionals had to scale the 100-m slope and cut car bodies apart. To alleviate safety concerns of setting up a crane close to a steep slope, the project team brought in a geotechnical engineer to supervise the car removal.
- Because of a high to extreme fire-danger rating in the summer of 2011, the work had to be timed for the fall, after the migratory-bird window had passed at the end of October. Freezing temperatures and snow in mid-November further reduced the work window, leaving no flexibility in the schedule.

During the remediation program, site professionals encountered unexpected debris on a ledge overlooking the marsh; this was scheduled for removal in 2012–2013. Finally, the teams collected sediment samples from the marsh and subjected them to toxicity testing, in preparation for an ecological-risk assessment scheduled for the marsh portion of the site in 2012–2013.

The resulting benefits to the natural environment far outweighed the remediation challenges. To date, the project has been a success, due to the collaboration between several government departments (Environment Canada, Public Works and Government Services Canada, Department of Fisheries and Oceans, and Health Canada), environmental consultants, contractors, and volunteer groups – each of which has learned much from the experience – and the site is on track to being restored to an aesthetically pleasing and ecologically sound condition.

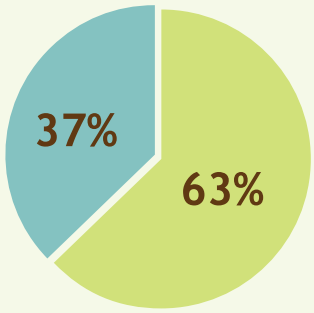
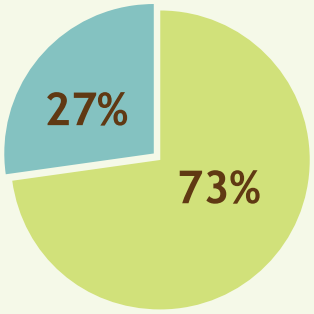
2.2 REDUCTION OF RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

After site-assessment activities are completed, custodians may conduct remediation and risk-management activities if risk to human health or the environment is unacceptable. These activities can include removal, treatment, reduction, or containment of the contaminants to prevent exposure which could impact human health and the environment. The methods used to address the contamination at each site depend on their efficacy and cost-effectiveness, and the unique circumstances of the site. Case studies presenting the remediation activities that were undertaken during 2011–2012 at a number of FCSAP-funded sites are included throughout this report.

In 2011–2012, FCSAP funded remediation activities at 408 sites, at a cost of $166 million. Custodians spent an additional $27.6 million, as per the FCSAP cost-sharing requirement. Table C.2 in Appendix C provides a breakdown of each custodian's share of the costs.

This remediation/risk management activity demonstrates good progress toward the FCSAP performance measurement target for reducing risks at federal contaminated sites. At the current rate, both the three- and five-year targets (of 1,100 and 1,500 sites, respectively) for conducting risk-reduction activities will be met, as shown in Table 2.

Table 2: Performance indicator 2: second immediate outcome

Performance indicator	Result (as of 2011-2012)	Three-year target (2011-2012 to 2013-2014)	Five-year target (2011-2012 to 2015-2016)
Number of priority FCSAP-funded sites where risk-reduction activities are being conducted	408 sites	1100 sites 	1500 sites 

Remaining Completed ✓ On track

Of the 408 sites where remediation was underway in 2011–2012, the remediation process was completed at 43 sites, signifying that risks have been reduced to safe levels. While the number of sites undergoing remediation varies from year to year, the 2011–2012 result suggests that there may be challenges to meeting the five-year target of completing remediation at 368 sites, as shown in Table 3. After the first year of Phase II, approximately 18% of Class 1 and Class 2 sites have implemented risk reduction plans under FCSAP, as shown in Table 4.

CASE STUDY

GIANT MINE REMEDIATION PROJECT

Location: Yellowknife, Northwest Territories
Custodian: Aboriginal Affairs and Northern Development Canada (AANDC)

Giant Mine covers 949 hectares within the city limits of Yellowknife, Northwest Territories. The site lies along the western shore of Yellowknife Bay, an arm of Great Slave Lake. This gold mine operated nearly continuously from 1948 until its closure in July 1999. The operation left 237,000 tonnes of arsenic trioxide stored underground, as well as various buildings and surface areas contaminated with arsenic.

After extensive site characterization and community consultations, AANDC approved a remediation plan for the site in October 2010. The plan has now entered the environmental-assessment stage, which will evaluate the impact of planned remedial action on human health and the environment. The remediation plan focuses on mimicking permafrost conditions to freeze the containment chambers in order to prevent water from coming into contact with the arsenic trioxide.This containment aims to prevent contamination of groundwater and native species.

The Giant Mine Remediation Project saw significant progress in 2011–2012:

- The project team developed and began the implementation of a site-stabilization plan designed to address the most urgent health, safety and environmental risks at the site.
- Preliminary findings of the freeze-optimization study have been positive, and the study has already identified several efficiencies and cost-saving measures that the team expects to incorporate into the final design.

Several of the final steps of the environmental assessment process were completed, including technical sessions and two rounds of information requests.

Table 3: Performance indicator 3: first intermediate outcome

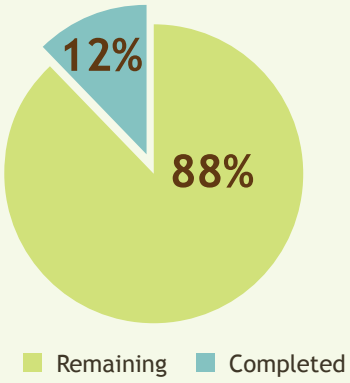
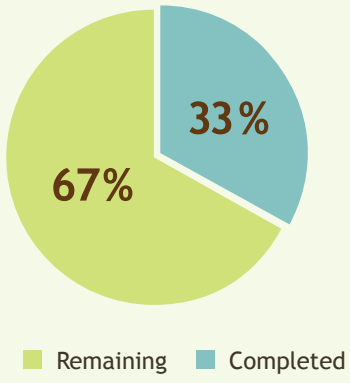
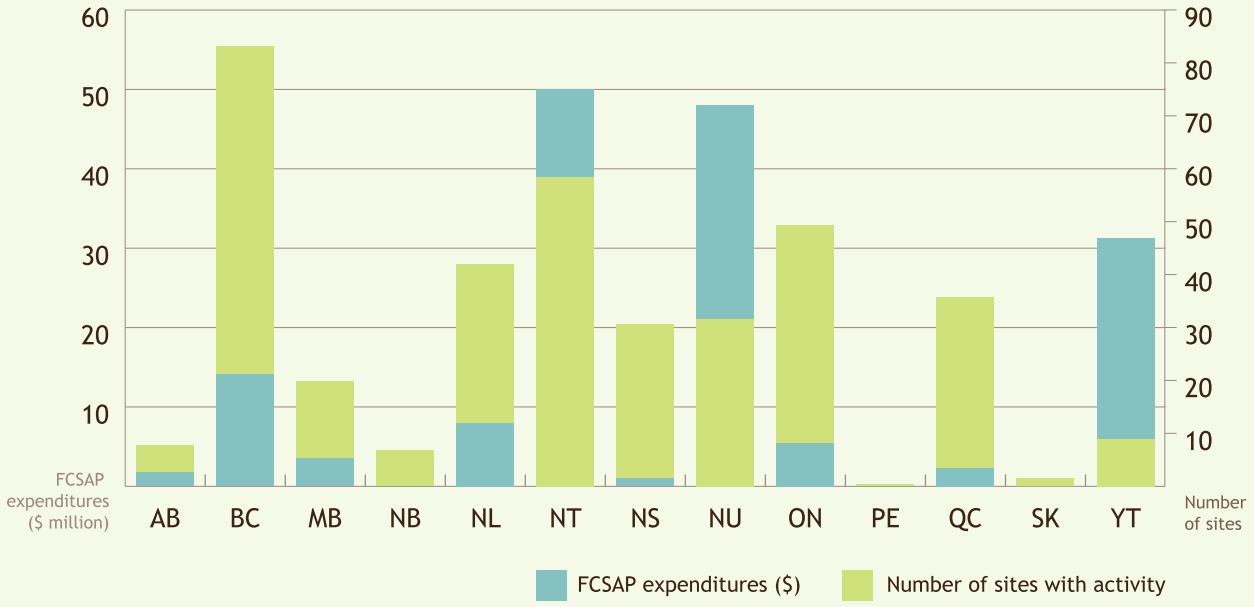
Performance indicator	Result (as of 2011-2012)	Five-year target (2011-2012 to 2015-2016)
Number of priority FCSAP-funded sites where risk-reduction activities have been completed	43 sites	368 sites 

Table 4: Performance indicator 4: first ultimate outcome

Performance indicator	Result (as of 2011-2012)	Five-year target (2011-2012 to 2015-2016)
Percent of all Class 1 and Class 2 sites where FCSAP-funded risk reduction plans have been implemented	18%	27% 

As Figure 3 shows, FCSAP expenditures on remediation activities were uneven across the country, with the three territories accounting for 78% of the total.

Figure 3: Distribution of FCSAP remediation expenditures and activity, by province or territory



Remediation expenditures were also uneven among custodians, with two departments accounting for more than 80% of this spending: AANDC-NAO ($91 million) and DND ($48 million). Both of these departments are working on the remediation of large, complex and remote sites in Canada's North. For example, in 2011–2012, these departments spent approximately $50 million (30% of all FCSAP remediation expenditures) on three projects: Giant Mine in the Northwest Territories, Faro Mine in Yukon Territory, and 5 Wing Goose Bay in Newfoundland and Labrador. Table C.4 in Appendix C provides a complete list of sites with FCSAP remediation expenditures.

CASE STUDY

GOOSE BAY REMEDIATION PROJECT

Location: 5 Wing Goose Bay, Newfoundland and Labrador
Custodian: Department of National Defence (DND)

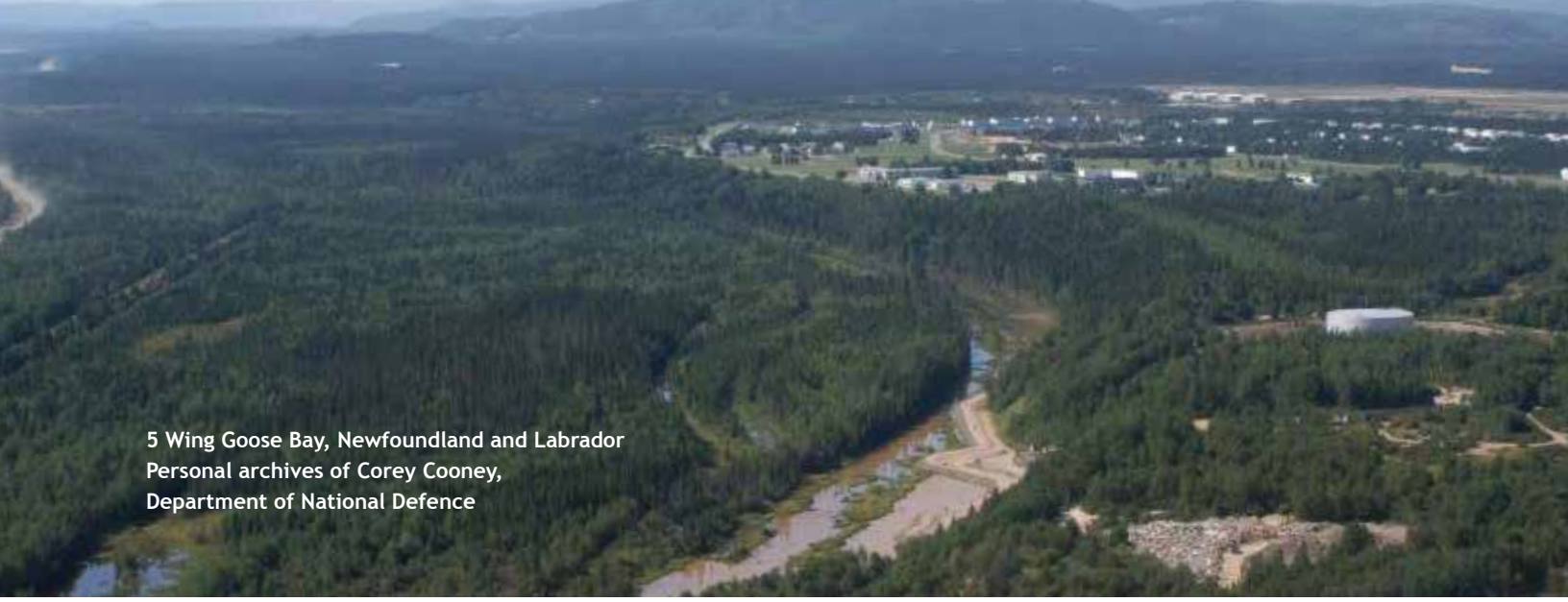
The Goose Bay Remediation Project has been underway since 2004. In February 2009, the Government of Canada approved the expenditure of up to $300 million toward remediating or risk managing the contamination at 5 Wing Goose Bay to the extent that it no longer poses an immediate or ongoing risk to human health or the environment.

Legacy contamination at the Wing is attributable to several sources. Major hydrocarbon plumes are a result of leaking underground and aboveground tanks, leaking or ruptured pipelines, and historical management and containment practices. Heavy metals and other chemical contaminants, such as polychlorinated biphenyls (PCBs) and volatile organic compounds, are also present in groundwater, soil, and sediment, due to historical waste-disposal practices and the presence of numerous dumpsites.

DND is implementing the project through a phased approach, with 10 sub-projects. All sub-projects have progressed through the first seven steps of the federal 10-step process for managing contaminated sites (detailed in Appendix B). Active remediation is now underway at several sites, and planned for more sites in the coming years. The focus to date has been the removal of free-phase liquid petroleum hydrocarbons (also called “free product”) from the subsurface water table. As of 2011–2012, fuel-recovery activities are underway at five sites, and more than 250,000 L of fuel have been removed.

The project team was also preparing for upcoming remediation at several other sites, including soil removal at Dome Mountain, and at the former No Name Lake and Crooks Lake campsites. Approval for remediation at these three sub-projects was received in July 2011, allowing for some work to start ahead of schedule. The overall remediation project is still on track to be completed by 2020.

The project offers many opportunities for a variety of remediation technologies and methodologies, including physical, chemical, and biological treatment; solidification and stabilization; soil washing; and natural attenuation. Also, the project team focuses on finding new procurement methods to encourage innovation and performance improvement, while achieving best value for the Government of Canada in meeting its regulatory and policy obligations. For example, they have instituted a competitive process for soil remediation, providing site characteristics and the remediation endpoint to potential contract bidders, who then detail their approaches, timelines and costs. These are then evaluated against project requirements to determine best value and highest likelihood of project success.



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

2.3 LIABILITY REDUCTION

Environmental liabilities are the estimated costs related to the remediation of contaminated sites where the Government of Canada is obligated or likely obligated to incur such costs. Liabilities are recorded annually in the Public Accounts of Canada.

Appendix D provides more information on the environmental liability of federal contaminated sites including a detailed breakdown of environmental liability by department.

FCSAP provides funding for only a portion of the sites that make up the total environmental liability reported in the Public Accounts of Canada. This is because some consolidated Crown corporations and other entities that report liabilities to the Public Accounts of Canada are responsible for contaminated sites that are not eligible to receive FCSAP funding (for example, because the sites are low-risk, or because the activities that caused the contamination occurred after April 1, 1998). Furthermore, some exceptional sites, such as the Sydney Tar Ponds and the low-level radioactive waste sites in the Port Hope area, have their own funding sources. For a more accurate estimate of the impact of FCSAP on the Government of Canada's total liability, Table D.1 in Appendix D provides a calculation of adjusted liability.

The total liability for the remediation of contaminated sites, as reported in the Public Accounts of Canada, increased by $419 million from $4.4 billion for 2,200 sites, as of March 31, 2011, to $4.8 billion for 2,400 sites, as of March 31, 2012. The adjusted liability increased by approximately $472 million over the same period.

The increase in adjusted liability is largely attributable to AANDC, which reported an increase of $355 million in 2011–2012. DND also increased its reported liabilities by approximately $100 million. These two departments account for 96% of the increase in adjusted liability. Despite the overall increase in adjusted liability, nine of the sixteen custodian departments reported a decrease in liability. Four of these departments (Correctional Service Canada, Health Canada, Parks Canada Agency and the Royal Canadian Mounted Police) reduced liability by more than 20% (see Table D.2 in Appendix D).

Changes in total liability for the remediation of contaminated sites can be attributed to several factors. Remediation expenditures and ongoing work at contaminated sites contribute to decreases in liability, while increases may result from liabilities being reported for the first time from newly identified sites. Changes in the estimated remediation costs, as better information becomes available at sites, can also lead to increases or decreases in recorded liability.

CASE STUDY

FARO MINE REMEDIATION PROJECT

Location: Faro, Yukon
Custodian: Aboriginal Affairs and Northern Development Canada (AANDC)

Located in south-central Yukon, close to the Town of Faro, the Faro Mine was an open-pit lead-zinc mine, operating from 1969 until it went into interim receivership in 1998. The site covers approximately 2,500 hectares and includes 70 million tonnes of tailings and 320 million tonnes of waste rock. Both the tailings and waste rock contain high levels of heavy metals that could leach into the environment, with corresponding long-term risks. A care and maintenance regime, including collection and treatment of contaminated water, general maintenance, and site security, is currently in place.

The Government of Canada and the Government of Yukon, along with the Ross River Dena Council, Kaska Dena Council, Liard First Nation and Selkirk First Nation, have worked cooperatively through a joint oversight committee to develop a site-closure and remediation plan. Development of this plan was led by a multi-disciplinary team of engineers, scientists and First Nations representatives, and informed by hundreds of technical studies, as well as consultations with community members of affected First Nations and the Town of Faro. An independent panel also performed a comprehensive peer review of remediation options. The project reached a major milestone in early 2009 when the oversight committee agreed on a closure plan. In 2011–2012, the project-design team was contracted through a competitive process to start the detailed design work.

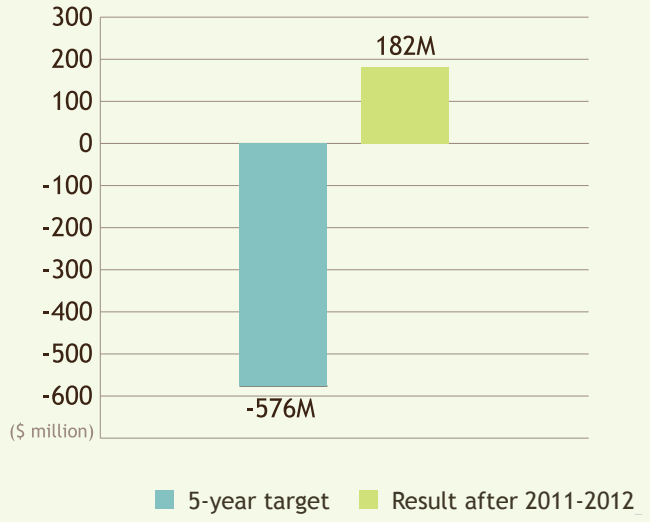
Remediation expenditures that reduced liability ($274 million) were offset by increases in liability resulting from changes in site-remediation costs ($173 million) and by new liability for sites not previously recorded ($521 million), which was more than four times the amount for 2010–2011 as detailed in Table D.3 in Appendix D.

The FCSAP performance measurement strategy sets out two indicators for the program objective of reducing liability.

The first indicator is based on a list of 73 high-priority FCSAP sites where remediation activities will be undertaken in Phase II. Custodians have estimated that liability will be reduced on this list of sites by $576 million at the end of Phase II. During the first year of Phase II, liability at these sites increased by $182 million (see Table 5). Liability at 49 sites was reduced by $75 million, but this progress was masked by an increase in liability of $256 million at 24 sites. Two of the largest sites in the FCSAP program, Faro Mine and Giant Mine, represented an increase of $144 million (56%) of the $256 million total increase in liability.

Table 5: Performance indicator 5: second intermediate outcome

Performance indicator	Result (as of 2011-2012)	Five-year target (2011-2012 to 2015-2016)
Change in total liability for the 73 highest priority FCSAP sites (from a liability perspective)	Increase in liability of $182 million	Reduction in liability of $576 million



The second indicator relates to the percentage of remediation expenditures that reduce liability over the five years of Phase II. After the first year of Phase II, 92% of remediation expenditures spent at FCSAP-funded sites ($176 million of $191 million) led to reductions in liability – which is close to the target of 95%, as detailed in Table 6. While most of the remediation project expenditures may be included in the liability estimate for the site, some activities that are eligible for FCSAP funding do not reduce liability. Remediation activities that do not contribute to the reduction of financial liability include bench-scale testing, small-scale demonstrations on field sites, and surveying areas of contaminated sites that may have archaeological value.

CASE STUDY

SOIL REMEDIATION ON A FIRST NATION RESERVE

Location: Little Grand Rapids, Manitoba
Custodian: Aboriginal Affairs and Northern Development Canada (AANDC)

Little Grand Rapids is located approximately 268 km northeast of Winnipeg, on the shores of Family Lake, near the Manitoba-Ontario border. Only air travel and the use of winter roads make this remote community accessible year-round.

The site is a residential property located centrally within the community of Little Grand Rapids, near the shoreline of Family Lake. The site currently contains a house trailer and a permanent community dock.

A 50,000-L single-walled steel aboveground storage tank had occupied the site since about 1996. Although the tank had been abandoned on the property since that time, it contained an undetermined volume of fuel which leaked from the gate valve at the bottom of the tank. The tank was situated approximately 19 m from the shoreline and 12 m from the house trailer.

The leak affected both surface and subsurface soils, as well as the groundwater. According to a Phase II environmental site assessment carried out in October 2009, approximately 2,400 m^3 of soil exceeded Canadian Council of Ministers of the Environment (CCME) criteria for petroleum hydrocarbons, polycyclic aromatic hydrocarbons and BTEX (benzene, toluene, ethylbenzene, and xylenes). The contaminant plume exceeded residential criteria for soil quality and CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life. The plume extended to the house trailer and to about one metre from the shoreline. In addition to the risk posed by exposure to contaminated soils, people living in and near the trailer, or visiting the dock area, could be subject to vapour intrusion from the site.

Little Grand Rapids First Nation partnered with an independent contractor to address challenges associated with remoteness and inaccessibility, equipment transportation, and securing specialized expertise.

AANDC worked closely with the First Nation to remediate the site. The abandoned tank on the residential lot was one of three sites at this First Nation that were being remediated at around the same time: a Manitoba Hydro site, the Little Grand Rapids Band Office and Garage and the Abandoned Tank at Residential Lot. Working on these three separate sites in proximity to each other helped maximize labour and equipment use. The remediation of the residential lot is complete and no long-term monitoring is required.

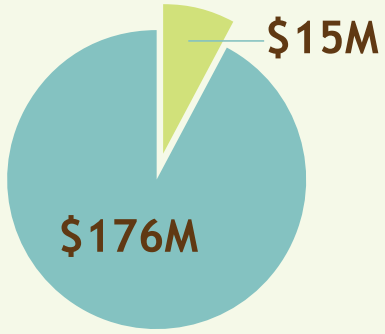
The remediation was completed on time and within budget. Along with providing a clean living environment for the residents of Little Grand Rapids, the project brings several other benefits to the community:

- local employment and development of skills;
- equipment acquisition;
- road upgrades, and improved road access and turnaround at the community dock;
- availability of landfill cover material; and
- restored AANDC-First Nation relationship

As for the site itself, the resident has been able to put a small garden in the front yard – an outward symbol of increased well-being and community pride.

Table 6: Performance indicator 6: second ultimate outcome

Performance indicator	Result (as of 2011-2012)	Five-year target (2011-2012 to 2015-2016)
Percentage of remediation expenditures that reduce liability over the five years of FCSAP Phase II	92%	95%



Remediation expenditures reducing liability Other remediation expenditures ✓ On track

2.4 FCSAP SECONDARY BENEFITS

Many FCSAP projects have socio-economic benefits, particularly for 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 local residents and contractors to learn and develop skills, to gain employment and to build careers and businesses. The partnerships forged among employed people and businesses, especially at the local level, help to foster a sense of ownership of the project results.

During 2011–2012, FCSAP activities led to the creation of approximately 1,085 jobs[4], with an estimated 5.2 direct jobs created for every million dollars spent on FCSAP projects. These jobs provide income and fuel economic growth. They also involve skills and training that workers can apply at other contaminated sites or at other types of projects altogether. For example, FCSAP remediation projects regularly employ northerners and northern Aboriginal Canadians as welders, heavy-duty mechanics, electricians and millwrights.

Through FCSAP, the Canadian remediation industry has an opportunity to advance new solutions when cleaning up federal contaminated sites. The program also builds awareness of innovative and sustainable technologies by sharing success stories within the federal community and private sector, through case studies profiled online and in reports, and through workshops for federal site managers and industry representatives.

[4] Based on a multiplier from ECO Canada, 2007

2.5 IMPACT OF FCSAP ON THE FEDERAL CONTAMINATED SITES INVENTORY

The Federal Contaminated Sites Inventory (FCSI), managed by the Treasury Board of Canada Secretariat, includes information on federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations, and on non-federal contaminated sites for which the Government of Canada has accepted financial responsibility. The FCSI also includes information on federal sites that are being investigated or have been investigated to identify the presence of contamination that could pose risks to human health or the environment.

As of March 31, 2012, the FCSI contained more than 22,200 sites of which 10,400 (47%) have been closed, either because remediation work has been completed or was not required. Approximately 6,800 sites (30%) are active, meaning that assessment, remediation, risk-management, or long-term monitoring is underway. About 5,000 sites (23%) are suspected to be contaminated but have not yet been assessed.

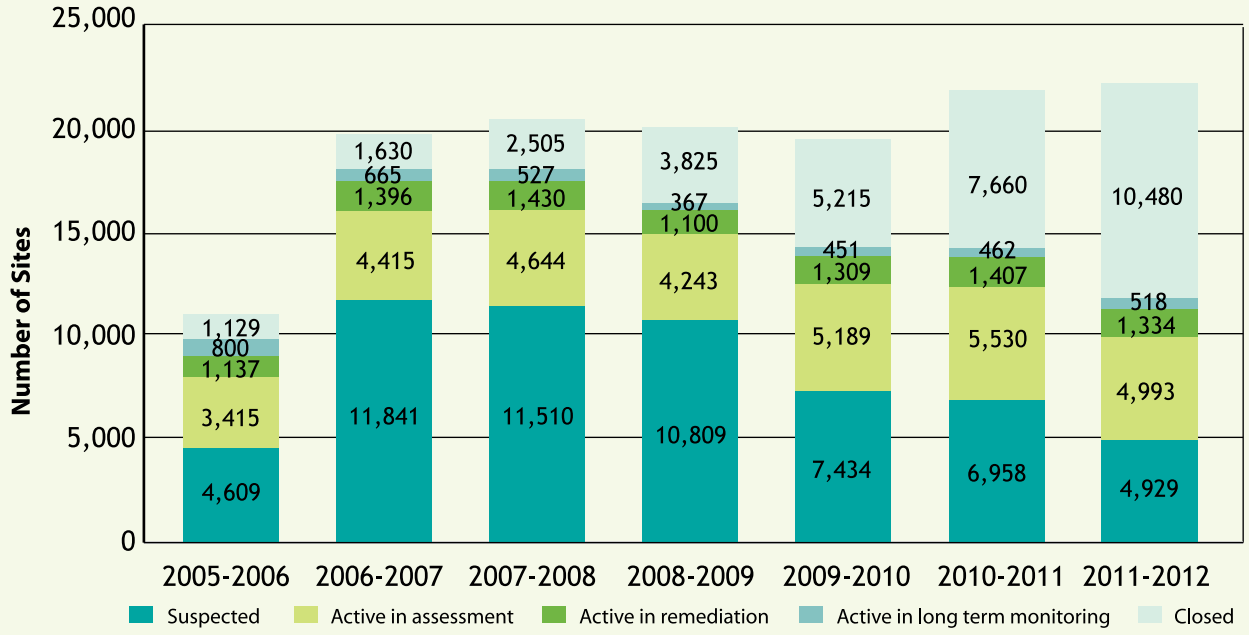
Not all sites on the FCSI are eligible for FCSAP remediation funding in Phase II: only Class 1 sites, and Class 2 sites that had started remediation before April 1, 2011, are eligible; and the sites must have been contaminated by activities that occurred before 1998. Despite these restrictions, FCSAP is the main source of funding for federal contaminated site management, covering about 90% of all FCSI site expenditures since 2005–2006.

Sites move from “suspected” to “active” status once the contamination has been confirmed. However, suspected sites may also be closed if a desktop review or a Phase I environmental site assessment (ESA) determines that historical activities would not likely have caused contamination. The number of suspected sites decreased by 29%, from 6,958 in 2010–2011 to 4,929 in 2011–2012. The number of active sites decreased by 7%, from 7,399 to 6,845.

The status of active sites depends on the “highest step completed” (HSC) of the federal approach to managing contaminated sites, detailed in Appendix B. The number of active sites in the assessment stage (HSC 3 to 6) decreased by 10% (from 5,530 to 4,993), while the number of active sites in the remediation stage (HSC 7 or 8) decreased by 5% (from 1,407 to 1,334) and the number of active sites in long-term monitoring (HSC 9) increased by 12% (from 462 to 518).

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 activities would not likely lead to contamination. Sites undergoing assessment (HSC 3 to 6) are usually closed if the assessment finds that contaminants are not posing an unacceptable risk. Sites are also closed after remediation, risk-management or long-term monitoring (HSC 7 to 10) activities have reduced the risks to acceptable levels. The number of closed sites increased by 37% during 2011–2012, from 7,650 to 10,480. The total number of closed sites in the FCSI has increased by 828% (1,129 to 10,480) since 2005. These results, illustrated in Figure 4, demonstrate that FCSAP is having a significant positive effect on the status of sites in the FCSI.

Figure 4: Status of sites in the FCSI from 2005-2012



CASE STUDY

OSHAWA HARBOUR REMEDIATION PROJECT

Location: Oshawa, Ontario
Custodian: Transport Canada

Oshawa Harbour is located on the north shore of Lake Ontario, at the eastern edge of the Greater Toronto Area. The Port of Oshawa provides loading, unloading and storage services for cargo ships using the Great Lakes / Saint Lawrence Seaway.

A history of industrial and commercial activities – including the disposal of dredged harbour sediment, waste-disposal practices, fuelling operations and shore infilling – has led to contamination of some of the lands at Oshawa Harbour. The contaminants include heavy metals, petroleum hydrocarbons, volatile organic compounds and polycyclic aromatic hydrocarbons.

© Transport Canada

As a custodian, Transport Canada approved a plan to address the contamination that included conducting environmental site assessments, risk assessments and risk-management measures. Upon considering the historical and continued industrial use of the property, and assessing the risks that the contaminants posed to human health and ecological receptors, site professionals had determined that carefully selected risk-management measures would be the optimal remedial approach and most cost-effective way to address the risks from land-based contaminants.

Cleaning up contaminated sites is not always the optimal remedial approach to address contamination. A risk-management approach is an effective strategy that not only addresses risks posed by the contamination, but is also technically and financially viable.

The plan gained both publicity and traction when the federal government announced FCSAP funding for this and other projects through the 2009 Economic Action Plan. Since then, project teams have put several risk-management measures in place:

- installation of liners and capping with clean soil or gravel (depending on the site use);
- installation of fencing to control site access; and
- erosion- and stormwater-control measures.

By addressing contamination through risk-management measures, Transport Canada has addressed risks to human health and the environment, at reasonable costs, while transforming the contaminated sites into attractive areas suitable for sustainable reuse. The remediation projects completed have also helped to stimulate the local economy and provide employment opportunities to industry and local businesses.

3 FCSAP APPROVALS AND EXPENDITURES

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

3.1 TYPES OF FUNDING

FCSAP provides three types of funding: assessment, remediation and risk-management, and program management. Assessment and remediation/risk-management funding allow custodians to perform work at contaminated sites, while program management funding helps them manage their site portfolios, through activities such as procurement, contract management, expert support, and reporting.

FCSAP is a cost-shared program that funds 85% of total remediation costs for projects under $90 million, with the balance funded by custodians. Remediation projects with total cost estimates of over $90 million may be funded entirely by FCSAP. The program also funds 80% of total site-assessment costs, with the balance funded by custodians.

3.2 FUNDING APPROVALS

Treasury Board approves FCSAP funding on the basis of federal custodians' planned assessment and remediation activities.

On the advice of the FCSAP Secretariat and the Treasury Board of Canada Secretariat, the Federal Contaminated Sites Director General Steering Committee provides general oversight and direction to the program and approves priority sites for remediation. A committee of Assistant Deputy Ministers also provides strategic direction for FCSAP in areas such as program design and funding parameters.

Federal custodians are accountable for the FCSAP funding they receive, and must ensure that their sites meet funding eligibility requirements. For example, custodians must first have grounds to suspect that a site is contaminated (normally on the basis of past activities at the site) before environmental site assessment activities can be funded. Guidance on the eligibility of project costs ensures that remediation or risk-management activities focus on reducing risks associated with contaminants.

3.3 FUNDING ALLOCATIONS, EXPENDITURES AND VARIANCE

FCSAP expenditures in 2011–2012 were $198 million, or 78% of the available funding. Custodians spent an additional $32 million to meet their cost-share requirements.

The most common reasons for custodians not spending all of the funds made available to them in 2011–2012 involved contracting and project delays, such as weather conditions that were inhospitable to the type of work being carried out or prevented access to the site.

Remediation and risk-management expenditures at federal contaminated sites represented 84% of total FCSAP expenditures ($166 million), assessment expenditures represented 5% of the total ($10.5 million),

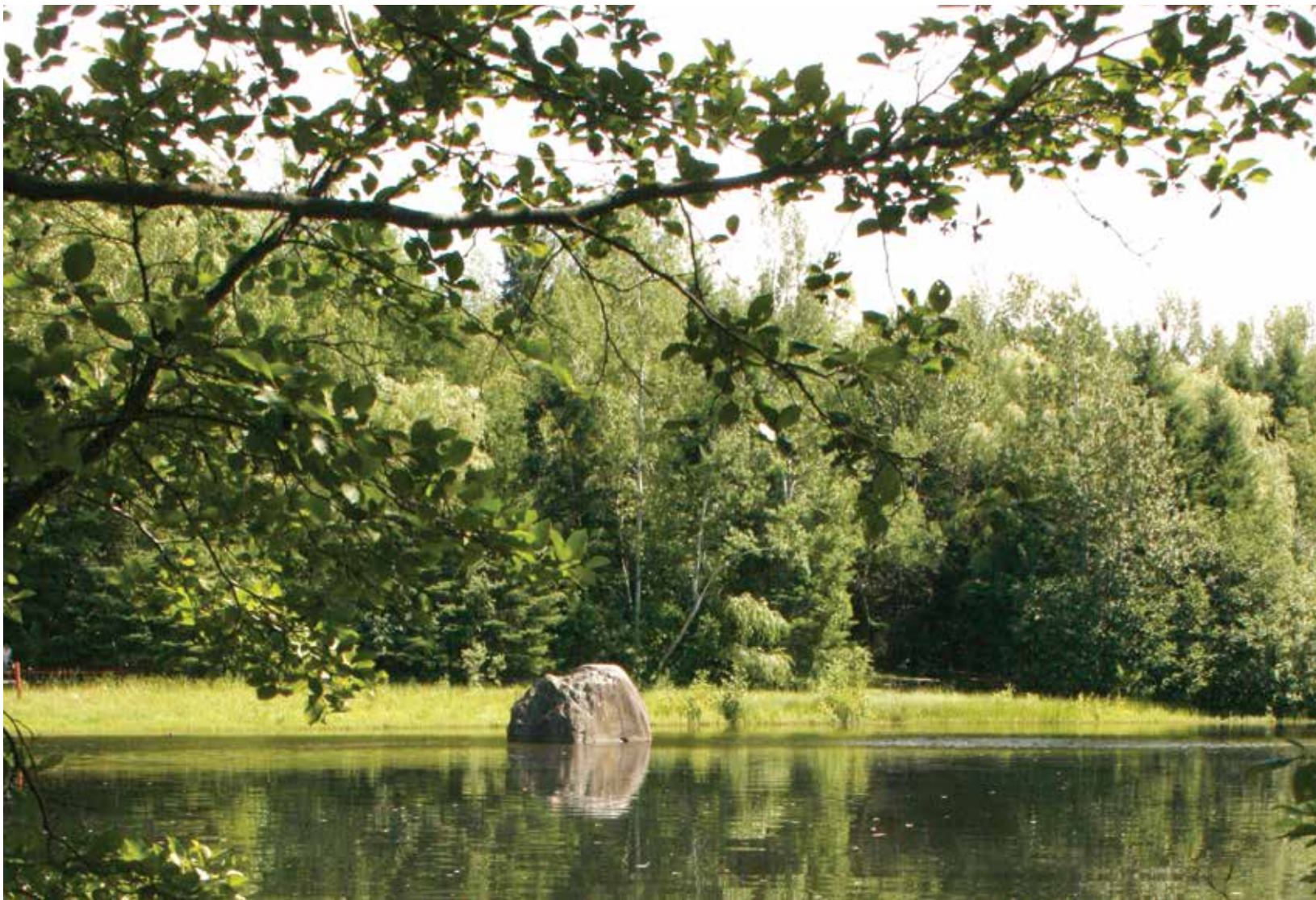
and program management expenditures accounted for 11% ($21.7 million). Table C.3 in Appendix C details the allocations and expenditures for the three types of FCSAP funding.

Custodians used various mechanisms to account for these unspent funds (or variances), which are also detailed in Table C.3, along with the amounts associated with each. The overall variance between the FCSAP funding available and expenditures was $57 million. Unspent funds can be brought forward for FCSAP activities in future years, through:

- government re-profiling, which must be approved by Treasury Board;
- carry-forward processes, which require internal approval from the custodian's finance group; or
- cash-management processes, which involve the custodian lending the unspent funds to another part of the organization, with the commitment that the funds will be returned next fiscal year.

These processes allow custodians flexibility in response to sometimes unpredictable circumstances that may affect expenditures on FCSAP-eligible sites. Funding that is not brought forward is lapsed, meaning that the funds will not be available for FCSAP activities in the future.

In 2011–2012, 73% of the FCSAP funding variance was re-profiled, 15% was carried forward, 4% was internally cash managed and 8% was lapsed. This means that, of the $57 million of available funding that was not spent in 2011–2012, $52 million (92%) will be available in future years.



APPENDIX A

Program Administration

PROGRAM ADMINISTRATION

FCSAP Secretariat and Expert Support Funding

In 2011–2012, $13.5 million was spent for FCSAP Secretariat and expert support services. The expenditure breakdown is shown in Table A.1.

Table A.1: Summary of FCSAP program management expenditures for secretariat and expert support services (2011–2012)

Department	FCSAP funding available ($)	FCSAP expenditures ($)	Variance ($)*
Fisheries and Oceans Canada (expert support)	1,955,396	1,805,474	149,922
Environment Canada (secretariat)	3,380,292	3,277,442	102,850
Environment Canada Expert Support	3,109,681	3,079,531	30,150
Total Environment Canada (secretariat / expert support)	6,489,973	6,356,973	133,000
Health Canada (expert support)	4,235,374	4,180,085	55,289
Public Works and Government Services Canada (expert support)	700,000	677,535	22,465
Treasury Board of Canada Secretariat (secretariat)	527,341	523,146	4,195
Total expenditures	13,908,084	**13,543,213**	**364,871**

*** Variance = FCSAP funding available – FCSAP expenditures**

Key Activities

Federal Contaminated Sites Action Plan Secretariat

The Federal Contaminated Sites Action Plan (FCSAP) Secretariat supported the FCSAP program by developing and securing approval of a program renewal proposal and associated funding for Phase II of the program in 2011. A performance measurement strategy, which included targets for custodians, expert support, Treasury Board of Canada Secretariat (TBS), and the FCSAP Secretariat, formed part of the renewal proposal. The FCSAP Secretariat also provided support to the Commissioner of Environment and Sustainable Development (CESD) during the preparation of its audit on managing the financial impact of environmental risk, which was released in May 2012. The FCSAP Secretariat also helped with the scoping phase of the FCSAP program evaluation, and updated the guidelines for FCSAP-eligible costs to reflect new program parameters and ensure that FCSAP resources are allocated in line with program priorities.

The FCSAP Secretariat carried out activities in several other key areas:

- **Program governance:** As part of program renewal, the FCSAP Secretariat worked with program partners to determine appropriate funding levels for assessment and remediation projects during Phase II of FCSAP. The Secretariat also developed a streamlined system to review and track remediation sites that are a priority for remediation, along with a new approach to collecting site-planning information from custodians, enabling better forecasting of progress. Finally, the Secretariat co-chaired both the Contaminated Sites Management Working Group and the FCSAP Director General Steering Committee, which provide operational and strategic support to the program.

- **Improvements to data management:** The FCSAP Secretariat upgraded the Interdepartmental Data Exchange Application database to improve tracking of project submissions and to better facilitate review by expert support departments; it also developed a strategy to improve the efficiency of its information management, performance reporting, and communications processes.

- **Performance monitoring and reporting:** The FCSAP Secretariat drafted the report of program activities from 2009 to 2011, presenting custodian expenditures and results through FCSAP, as well as the indicators and targets committed to in the FCSAP performance measurement strategy.

- **Communicating success:** The FCSAP Secretariat developed a strategic communications plan and established an interdepartmental working group to increase public awareness of FCSAP commitments and successes. Specific activities included launching of a revamped web portal, development of standard taglines for success stories, and the preparation of a ministerial announcement of FCSAP Phase II.

Treasury Board of Canada Secretariat

Throughout 2011–2012, 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 implementation issues. In partnership with Environment Canada, TBS devoted significant effort to developing and securing approval of the proposal and funding for FCSAP Phase II program renewal, and to the scoping of the FCSAP program evaluation. TBS also supported the work of the CESD audit team.

Other activities undertaken by TBS to support FCSAP included:

- **Program governance:** TBS co-chaired, with Environment Canada, the Federal Contaminated Sites Assistant Deputy Minister and Director General Steering Committees, and participated in the Contaminated Sites Management Working Group and other sub-committees, as required.

- **Improvements to data management:** In addition to ongoing administration of the Federal Contaminated Sites Inventory (FCSI), TBS developed system enhancements, such as reporting capabilities, supported ongoing improvements to data quality, and issued an updated *FCSI Input Guide* in March 2012. TBS was actively engaged in the analysis of priority areas for improvement of data management within FCSAP. TBS also supported the ongoing maintenance and revitalization of the federal contaminated sites web portal.

- **Performance monitoring and reporting:** TBS supported the FCSAP annual reporting team – for example, by providing data from the FCSI. TBS also supported the development of a performance measurement strategy for Phase II, and for the renewal of the process for reporting data on planning for contaminated sites.

- **Community building :** TBS coordinated the interdepartmental planning committee for the May 2012 Real Property Institute of Canada Federal Contaminated Sites National Workshop.

Expert support departments

In 2011–2012, expert support groups in several departments – all of which are also custodians – focused on developing and delivering guidance documents and training, providing advice, conducting reviews of site-management projects, and promoting innovative and sustainable remediation technologies.

Some of their specific activities follow:

- The Department of Fisheries and Oceans (DFO), Environment Canada, and Health Canada conducted site visits and reviewed reports, to provide advice and guidance on risk assessments, site classifications, regulations, remedial plans and technical requirements.

- DFO led the review of the Aquatic Sites Classification System, a key deliverable to the Aquatic Sites Working Group, and provided training for custodians. DFO also conducted a state-of-science review and a technical guide for long-term monitoring at aquatic sites, and conducted six scientific studies on aquatic contaminated sites and their effects on fish and fish habitat. Furthermore, DFO delivered several information and training sessions, on subjects such as "A Proposed Scientific Approach for Achieving Site Closure of Aquatic Contaminated Sites", "Framework for Addressing and Managing Aquatic Contaminated Sites under the FCSAP", and "Decision Tool for Evaluating Remedial Action Plans". DFO also developed a web presence to communicate its expertise to custodians.

- Environment Canada promoted regulatory compliance at federal sites and ensured that site-remediation and risk-management decisions were consistent with federal environmental policies and management objectives. Custodians also sought assistance from Environment Canada in developing terms of reference for ecological risk assessments. In response, the department provided the custodians with training on National Classification System scoring, ecological risk assessment, Canada-Wide Standards for Petroleum Hydrocarbons in Soil, and site characterization. Environment Canada also liaised with federal departments, provincial and territorial ministries of health and the environment, and Aboriginal peoples, on health and environmental issues. In 2011–2012, Environment Canada finalized a comprehensive guidance document on ecological risk assessment, a supplemental guidance document on the National Classification System for Contaminated Sites, and guidance documents on toxicity and toxicity reference values. Finally, Environment Canada developed guidance on long-term monitoring and site-closure processes, and finalized and distributed the Priority for Assessment tool.

- Health Canada provided custodians with expertise on various human-health risk-assessment topics and continued developing human health-based guidelines, guidance, and training. Health Canada finalized the Barium Soil Quality Guidelines and submitted them to the Canadian Council of Ministers of the Environment for public consultation. The department updated guidance on human health detailed quantitative risk assessment for chemicals and radiological substances and updated and/or developed guidance on vapour intrusion, country foods, and involvement of Aboriginal peoples. Additionally, Health Canada conducted a toxicological literature review for several polyfluorinated chemicals (PFCs), which led to the development of guidance for screening soil and groundwater. Finally, Health Canada provided training on environmental site investigations, a development tool for public-involvement plans, improving stakeholder relations, and vapour intrusion.

- Public Works and Government Services Canada (PWGSC) liaised with industry at contaminated-site workshops such as RemTech and RemTech East. PWGSC also participated in forums such as the Sustainable Remediation Forum Canada to share information on sustainable, green, and innovative approaches being used within the federal community, and to learn about similar approaches within the private sector. With assistance from private-sector providers, the department developed six technology profiles that showcased innovative, sustainable, and green approaches being used within the federal community. PWGSC continued with annual updates to the Guidance and Orientation for the Selection of Technologies tool, as well the finalization of the Sustainable Development Tool for contaminated-site remediation. Finally, PWGSC developed green/sustainable specifications for use in remediation projects, in accordance with the National Master Specifications used within the federal government to create tenders to solicit private-sector contractors.

[5] A Federal Approach to Contaminated Sites. (Contaminated Sites Management Working Group 2000). http://www.federalcontaminatedsites.gc.ca/default.asp?lang=en&n=B4AC7C22-1

APPENDIX B

Federal Approach to Managing Contaminated Sites

FEDERAL APPROACH TO MANAGING CONTAMINATED SITES

A contaminated site is an area in which substances occur at concentrations above normally occurring background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment. Determining the risk posed by the presence of these substances also involves determining potential exposure pathways and identifying potential receptors. Contamination can come from sources such as storage tank leaks, long-term use of industrial facilities, or accidents – for example, polychlorinated biphenyl (PCB) spills.

To ensure that custodians take a common approach to managing federal contaminated sites, FCSAP follows a 10-step process, set out in *A Federal Approach to Contaminated Sites*:[5]

- **Step 1: identify suspect sites:** identify potentially contaminated sites, on the basis of past or current activities on or near the site.
- **Step 2: historical review:** assemble and review all 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 Canadian Council of Ministers of the Environment (CCME) National Classification System:** prioritize the site for future investigations and remediation or 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 the CCME National Classification System:** update the ranking, according to 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:** if required, conduct long-term monitoring to 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.

Process walkthrough

Once 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. The purpose of this work is to determine whether contamination exists on the property.

The next step of the process consists of an initial testing program (Step 3) to confirm the presence and extent of contamination at a site. If contamination is present above levels specified in policies or guidelines or is above background levels and may cause a risk, additional detailed testing (Step 5) must occur. The results from assessments help to identify risks to human health and the environment, to determine what remediation or risk-management action is necessary.

To determine the priority of a site for management action, federal sites are classified according to the nature, severity and immediacy of the risk posed to human health and the environment, using the CCME National Classification System for Contaminated Sites or the FCSAP Aquatic Sites Classification System, depending on whether the contaminated site is on land or in water. To ensure that available funding is directed to the highest risk sites, FCSAP funds the remediation or risk-management of Class 1 (high priority for action) sites, and Class 2 (medium priority for action) sites that spent FCSAP remediation expenditures before April 1, 2011. Class 3 (low priority for action) sites are not eligible for FCSAP remediation funding.

Remediation is the act of removing, reducing or destroying contaminants and pollution from the environment (e.g., from soil, groundwater or surface water such as lakes and rivers). Conversely, risk-management is a set of actions aimed at controlling and managing contaminants. Both remediation and risk-management aim to protect the environment and human health by limiting exposure to hazardous substances, leading to improved quality of life, increased wildlife habitat, and economic benefits.

Once assessment activities have confirmed that contamination levels pose a risk to human health or the environment, a responsible custodian oversees the development of the remediation plan (Step 7) and estimates the federal environmental liability for the contaminated site. Following this step, a responsible custodian then works closely with consultants, contractors and tradespeople to implement the plan (Step 8). Usually, the final stage of the project is to confirm that the remediation or risk-management objectives have been reached (Step 9). The site may then be closed, which indicates that no further action is required and that the federal financial liability has been reduced to zero. However, for sites where the most appropriate course of action is to risk-manage contamination by containing it on a site and reducing exposure to people, plants and animals, 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, by custodian

Custodian	Number of sites with activity	FCSAP funding available ($)	FCSAP expenditures ($)	Custodian expenditures ($)	Total expenditures ($)
AAFC	3	64,000	54,679	13,670	68,349
AANDC-LED	65	530,355	530,355	1,811,229	2,341,584
AANDC-NAO	83	1,724,973	1,634,479	408,620	2,043,099
CSC	28	1,557,887	1,129,522	48,750	1,178,272
DFO	434	1,912,000	1,906,759	678,878	2,585,637
DND	119	3,943,000	3,242,063	810,516	4,052,579
EC	21	361,148	361,148	90,423	451,571
HC	0	0	0	0	0
IC	1	48,000	48,000	46,000	94,000
JCCBI	0	146,000	0	0	0
NCC	60	721,618	721,618	180,404	902,022
NRC	1	78,000	78,000	75,056	153,056
NRCan	4	117,000	113,049	28,262	141,311
PCA	7	254,700	74,024	28,061	102,085
PWGSC	1	65,000	65,000	71,031	136,031
RCMP	19	476,000	328,156	234,081	562,237
TC	3	182,000	182,000	82,277	264,277
Total	**849**	**12,181,681**	**10,468,852**	**4,607,258**	**15,076,110**

Table C.2: FCSAP remediation funding available and expenditures, by custodian

Custodian	Number of sites with activity	FCSAP funding available ($)	FCSAP expenditures ($)	Custodian expenditures ($)	Total expenditures ($)
AAFC	2	220,000	159,096	28,076	187,172
AANDC-LED	78	9,962,485	9,911,738	8,720,283	18,632,021
AANDC-NAO	73	102,219,000	91,083,966	7,401,731	98,485,697
CSC	6	850,000	652,163	115,088	767,251
DFO	80	1,000,000	994,531	639,479	1,634,010
DND	68	60,076,000	47,870,188	5,666,238	53,536,426
EC	6	3,630,101	2,378,001	54,835	2,432,836
HC	1	70,000	62,688	0	62,688
IC	0	0	0	0	0
JCCBI	0	886,000	0	0	0
NCC	6	5,547,043	820,133	144,730	964,863
NRC	3	43,000	41,663	10,248	51,911
NRCan	1	187,000	138,198	24,388	162,586
PCA	31	2,214,111	875,095	167,404	1,042,499
PWGSC	22	8,274,000	4,210,546	3,388,431	7,598,977
RCMP	4	255,000	162,369	72,347	234,716
TC	27	24,717,516	6,677,883	1,178,450	7,856,333
Total	**408**	**220,151,256**	**166,038,258**	**27,611,728**	**193,649,986**

Table C.3: Program-level summary of FCSAP funding available and expenditures

Status of funding	Program management ($)	Assessment ($)	Remediation and risk-management ($)	Total funding ($)
FCSAP funding approved for 2011–2012	22,556,780	10,658,700	195,697,111	228,912,591
FCSAP funding brought forward from previous fiscal years	76,519	343,549	25,398,328	25,818,396
FCSAP funds received from another custodian (+)	305,100	219,027	0	524,127
FCSAP funds given to another custodian (-)	-305,100	-219,027	0	-524 127
FCSAP funds internally transferred to another stream (assessment, remediation, program management) (±)	-235,249	1,179,432	-944,183	0
Total FCSAP funding available	22,398,050	12,181,681	220,151,256	254,730,987
FCSAP expenditures	21,692,001	10,468,852	166,038,258	198,199,111
FCSAP funds re-profiled	0	0	41,276,121	41,276,121
FCSAP funds carried forward	124,692	326,676	7,925,133	8,376,501
Internal cash-management of FCSAP funds	565	428,365	1,951,780	2,380,710
Lapsed FCSAP funds	580,792	957,788	2,959,964	4,498,544
Custodian cost-share expenditures	0	4,607,258	27,611,728	32,218,986

Table C.4: List of FCSAP-funded remediation sites

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
AAFC	Langford Community Pasture	00001360	MB	20,364	3,594
AAFC	The Atlantic Food and Horticulture Research Centre	02731004	NS	138,732	24,482
AANDC-LED	186 - Martin Falls - 06299 - MARTEN FALLS 65 / 3000027095	05166001	ON	1,334,925	235,575
AANDC-LED	186 - Martin Falls - 06299 - MARTEN FALLS 65 / 3000027195	05166002	ON	690,046	121,773
AANDC-LED	186 - Martin Falls - 06299 - MARTEN FALLS 65 / 3000027395	05166003	ON	62,731	11,070
AANDC-LED	186 - Martin Falls - 06299 - MARTEN FALLS 65 / 3000027495	00000463	ON	403,990	71,292
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 0402702806	00006671	ON	5,401	953
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 0402705206	00006675	ON	18,493	3,263
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 0402705306	00006676	ON	1,021	180
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 0402705506	00006678	ON	42	7

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 3000005894	05190003	ON	21,512	3,796
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 3000005994	05190004	ON	32,225	5,687
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 3000020095	05190006	ON	23,844	4,208
AANDC-LED	204 - North Caribou Lake - 06315 - WEAGAMOW LAKE 87 / 3000020395	05190007	ON	22,242	3,925
AANDC-LED	208 - Pikangikum - 06320 - PIKANGIKUM 14 / 3000007994	05176004	ON	15,980	2,820
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402306805	00000412	ON	2,913	514
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402306905	00000413	ON	12,746	2,249
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402307105	00000415	ON	1,821	321
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402307205	00000416	ON	1,821	321
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402308805	00000597	ON	21,267	3,753
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000115799	00006762	ON	728	129
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000004694	05149001	ON	24,326	4,293
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000005194	05149003	ON	207,572	36,630
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000004994	05149008	ON	90,239	15,925
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000115699	05149013	ON	728	129
AANDC-LED	212 - Kingfisher - 06324 - KINGFISHER LAKE 1 / 3000001994	05162001	ON	36,569	6,453

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
AANDC-LED	270 - Little Grand Rapids - 06376 - LITTLE GRAND RAPIDS 14 / 0503608008	00007053	MB	185,940	32,813
AANDC-LED	270 - Little Grand Rapids - 06376 - LITTLE GRAND RAPIDS 14 / 0503608608	00007057	MB	743,761	131,252
AANDC-LED	296 - God's Lake First Nation - 06444 - GOD'S LAKE 23 / 0501736204	00006892	MB	12,325	2,175
AANDC-LED	296 - God's Lake First Nation - 06444 - GOD'S LAKE 23 / 4000013095	05301001	MB	12,325	2,175
AANDC-LED	297 - Garden Hill First Nations - 06448 - GARDEN HILL FIRST NATION / 0502583005	00005622	MB	17,377	3,066
AANDC-LED	297 - Garden Hill First Nations - 06448 - GARDEN HILL FIRST NATION / 0503396908	00006936	MB	17,377	3,066
AANDC-LED	298 - St. Theresa Point - 09147 - ST THERESA POINT / 4000038700	00006601	MB	85,000	15,000
AANDC-LED	299 - Wasagamack First Nation - 09148 - WASAGAMACK / 0502601305	00005805	MB	34,302	6,053
AANDC-LED	299 - Wasagamack First Nation - 09148 - WASAGAMACK / 4000044401	05306003	MB	604,845	97,010
AANDC-LED	300 - Red Sucker Lake - 06467 - RED SUCKER LAKE 1976 / 4000011594	05324001	MB	30,399	5,365
AANDC-LED	302 - Manto Sipi Cree Nation - 00104 - GOD'S RIVER INDIAN SETTLEMENT / 4000036799	05302001	MB	22,780	4,020
AANDC-LED	303 - Sayisi Dene First Nation - 06464 - CHURCHILL 1 / 0502573605	00005528	MB	91,723	16,186
AANDC-LED	303 - Sayisi Dene First Nation - 06464 - CHURCHILL 1 / 0502575005	00005542	MB	93,951	16,580
AANDC-LED	307 - Shamattawa First Nation - 06460 - SHAMATTAWA 1 / 0501572104	05328002	MB	34,213	6,038
AANDC-LED	307 - Shamattawa First Nation - 06460 - SHAMATTAWA 1 / 0503354907	00006928	MB	42,500	7,500
AANDC-LED	307 - Shamattawa First Nation - 06460 - SHAMATTAWA 1 / 4000032198	05328001	MB	39,100	6,900
AANDC-LED	311 - Mathias Colomb - 06456 - PUKATAWAGAN 198 / 4000002393	00006814	MB	1,306,137	230,495
AANDC-LED	317 - Northlands - 06468 - LAC BROCHET 197A / 4000018896	05310001	MB	94,134	16,612
AANDC-LED	462 - Saddle Lake Cree Nation - 06703 - WHITE FISH LAKE 128 / 0703415008	00006947	AB	482,525	85,151

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 / BC04825611	00008201	BC	1,452,189	3,422,879
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 / BC04825911	00008204	BC	580,876	1,369,151
AANDC-LED	564 - Kwantlen First Nation - 08033 - LANGLEY 5 / BC04790410	00008206	BC	131,730	473,071
AANDC-LED	569 - Semiahmoo - 08047 - SEMIAHMOO / 0903374908	00006932	BC	118,650	0
AANDC-LED	570 - Shxwhá:y Village - 08048 - SKWAY 5 / 0902661006	00006617	BC	97,250	21,250
AANDC-LED	597 - Penticton - 07397 - PENTICTON 1 / 7000088397	05076001	BC	100,225	0
AANDC-LED	642 - Cowichan Tribes First Nation - 06799 - COWICHAN 1 / 7000127498	00000446	BC	136,850	24,150
AANDC-NAO	BAF 5 - Resolution Island	C1017001	NU	362,850	64,032
AANDC-NAO	BAR C - Tununuk	00000379	NT	107,604	18,989
AANDC-NAO	Bear Island (James Bay)	C1039001	NU	549,436	96,959
AANDC-NAO	Bullmoose Lake Mine (Formerly Mann Lake)	00000068	NT	207,433	36,606
AANDC-NAO	CAM D - Simpson Lake	C1002001	NU	4,758,992	839,822
AANDC-NAO	Canol Trail - Mile 100 - Road Maintenance Camp - Bolstead Creek	00024273	NT	47,891	8,451
AANDC-NAO	Canol Trail - Mile 108 - Pump Station #4	00024274	NT	47,891	8,451
AANDC-NAO	Canol Trail - Mile 131 - Maintenance Camp - Twitya River	00024288	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 131.3 - Pipeline Oil Spill Site	00024287	NT	47,891	8,451
AANDC-NAO	Canol Trail - Mile 142 - Drum Cache/Pipeline Oil Spill	00024276	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 150 - Vehicle Boneyard Site	00024277	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 160 - Drum Cache	00024278	NT	47,891	8,451
AANDC-NAO	Canol Trail - Mile 170 - Pump Station #5	00024279	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 184 - Vehicle Boneyard and Drums - Ekwi River	00024280	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 202 - Vehicle Boneyard	00024281	NT	47,891	8,451
AANDC-NAO	Canol Trail - Mile 204 - Former Camp and Drums	00024282	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 208 - Pump Station #6	00024283	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 212 - Drum Cache	00024284	NT	17,959	3,169

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
AANDC-NAO	Canol Trail - Mile 215 - Drum Cache in Pond	00024285	NT	1,134	19,995
AANDC-NAO	Canol Trail - Mile 222 - Camp & Vehicle Cache	00024286	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 36 - Pump Station 2	00024169	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 46 - Whore Hill Barrel Dump	00024170	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 50 - Road Maintenance Camp - Little Keele	00024267	NT	44,898	7,923
AANDC-NAO	Canol Trail - Mile 68 - Blue Mountain Maintenance Camp	00024269	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 76 - Pump Station 3	00025577	NT	44,898	7,923
AANDC-NAO	Canol Trail - Mile 80 - Road Maintenance Camp - Plains of Abraham	00024271	NT	17,959	3,169
AANDC-NAO	Canol Trail - Mile 90 - Road Maintenance Camp - Andy Creek	00024272	NT	17,959	3,169
AANDC-NAO	Cape Christian	C1005001	NU	22,112	3,902
AANDC-NAO	Clinton Creek (Bosworth Creek)	C1052001	YT	559,922	98,810
AANDC-NAO	Colomac Mine (Baton Lake, Indin Lake, Goldcrest, Grizzly Bear)	C1047001	NT	5,289,899	0
AANDC-NAO	Contact Lake Mine (International Uranium, M Group, Sam, Kayo)	C1051001	NT	96,228	16,981
AANDC-NAO	El Bonanza Mine (Bonanza East, Bonanza Vein, Spud Vein)	00000076	NT	96,228	16,981
AANDC-NAO	Faro Mine	C2503001	YT	21,705,104	0
AANDC-NAO	FOX E - Durban Island	C1022001	NU	191,147	33,732
AANDC-NAO	Giant Mine (Giant Yellowknife Mines; Royal Oak Mines; A, B & C Shafts)	C1048001	NT	22,257,981	0
AANDC-NAO	Grand Roy Mines Camp (Alias = Camp Valley), L-16 (Victoria Island)	00000407	NT	4,899	864
AANDC-NAO	Hidden Lake Mine (Ragged Ass Mine)	C1025001	NT	144,525	25,504
AANDC-NAO	Hope Lake	00023429	NU	215,601	38,047
AANDC-NAO	Indore Gold Mine/Hottah Lake (Pitch 8)	C1026001	NT	159,900	28,218
AANDC-NAO	Johnson Point	00000841	NT	11,297	1,994
AANDC-NAO	Mount Nansen Mine	C2505001	YT	2,855,794	503,964
AANDC-NAO	North Inca Mine (North Inca)	C1028001	NT	21,789	3,845
AANDC-NAO	Old Frobisher Wells - Hay River	00023468	NT	2,068,039	364,948

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
AANDC-NAO	Outpost Island	C1038001	NT	304,461	53,728
AANDC-NAO	Padloping Island	C1016001	NU	138,975	24,525
AANDC-NAO	PIN B - Clifton Point	C1050001	NU	5,355	945
AANDC-NAO	PIN D - Ross Point	C1040001	NU	2,590,981	457,232
AANDC-NAO	PIN E - Cape Peel	C1045001	NU	2,155,048	380,303
AANDC-NAO	Sawmill Bay/Great Bear Lake	00000403	NT	1,539,648	271,703
AANDC-NAO	Terra #1 (North Mine, Silver Bear Properties)	C1010001	NT	192,456	33,963
AANDC-NAO	Tundra-Taurcanis Mine (Bulldog Yellowknife Gold Mines, Tamcanis Mines Limited, Tundra Gold Mines)	C1035001	NT	15,924,504	2,810,207
AANDC-NAO	United Keno Hill Mine	C2509001	YT	5,963,947	1,052,461
CSC	221-C11 Westmorland Institution - Former Location of Guard Housing	00012993	NB	67,373	11,889
CSC	330-C01 Leclerc Institution - Former Tank Nest Beside Central Heating Plant	00013010	QC	45,466	8,023
CSC	451-C12-A Pittsburgh Former Underground storage tank	00024746	ON	147,409	26,013
CSC	460-C01 Warkworth Institution - Underground Storage Tanks	00023469	ON	89,925	15,869
CSC	530-L01 Former Landfill at South West	00013023	AB	202,667	35,765
CSC	833-C01 Mountain Institution - Former Sewage Lagoon	00024674	BC	99,324	17,528
DFO	Addenbroke Island	67677001	BC	1,578	4,550
DFO	Baccalieu Island - NE Minor Aid	00012285	NL	11,281	2,295
DFO	Baccalieu Island - Southwest Point - East of Lightkeepers Bldg (DFO 003)	80521003	NL	1,866	634
DFO	Baccalieu Island - Southwest Point - Fuel Storage (DFO 001)	80521001	NL	1,866	634
DFO	Baccalieu Island - Southwest Point - West of Generator Bldg (DFO 002)	80521002	NL	1,866	634
DFO	Ballenas Island - Metal and Hydrocarbon on Ballenas Island Property	17675001	BC	1,578	4,550
DFO	Battle Harbour (SCH - Uplands - DFRP# 01786)	01786001	NL	5,179	1,219
DFO	Bay Roberts (Uplands - DFRP# 00253)	00012541	NL	18,025	3,486
DFO	Belle Isle, South End Upper - Boat Landing Area	00023009	NL	804	446

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
DFO	Belle Isle, South End Upper - East of Generator Building	01791001	NL	804	446
DFO	Belle Isle, South End Upper - East of Upper Light	01791002	NL	804	446
DFO	Belle Isle, South End Upper - Old Fuel Cache	01791003	NL	804	446
DFO	Belle Isle, South End Upper - Tank Area (North of the Lower Light)	00013119	NL	804	446
DFO	Belle Isle, South End Upper - Upper Lake Area	00023010	NL	804	446
DFO	Boat Bluff	67678001	BC	1,578	4,550
DFO	Bonilla Island - Sector Light	19482001	BC	1,578	4,550
DFO	Burnt Point - Lightstation - DFRP# 34391	34931001	NL	11,114	2,266
DFO	Cape Beale	17809001	BC	1,578	4,550
DFO	Cape Bonavista - Light Tower / Dwelling #2 / Shed	34624002	NL	15,049	13,787
DFO	Cape Mudge	18225001	BC	1,578	4,550
DFO	Cape Negro Island - Metal and Hydrocarbon Impacted Soil near Light	02296001	NS	2,126	374
DFO	Cape Negro Island - Metal/ Hydrocarbon Impacts in Soil NW of Light	02296002	NS	2,126	374
DFO	Cape Roseway - Metals in soil near buildings	02334002	NS	3,189	561
DFO	Cape Roseway - PHC Impacts in Soil- Burn Area/Fuel Storage Bldg	02334003	NS	3,189	561
DFO	Cape Sable - Light Structure Area Metals/TPH Impacts in Soil	02298001	NS	5,956	28,341
DFO	Cape Scott - Main station	19007001	BC	1,578	4,550
DFO	Cape Spencer - Metal Impacts in Soil in Light Area/Former Buildings	03876001	NB	2,976	524
DFO	Carmanah Point	17533001	BC	1,578	4,550
DFO	Chatham Point	18090001	BC	1,578	4,550
DFO	Chrome Island - Range Light	18001001	BC	1,578	4,550
DFO	Conception Harbour (Tidal Zone - DFRP# 26796)	00019062	NL	6,116	1,384
DFO	Cultus Lake Laboratory - Site-wide shallow soil quality, metals	16509001	BC	21,320	2,020
DFO	Discovery Island - Metals and Hydrocarbons in Dump Areas	17425001	BC	1,578	4,550
DFO	Dryad Point	67679001	BC	1,578	4,550

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
DFO	Egg Island	67680001	BC	1,578	4,550
DFO	Entrance Island	17611001	BC	1,578	4,550
DFO	Estevan Point	17813001	BC	1,578	4,550
DFO	Ferryland (Head - Minor Shore Light)	00018257	NL	4,478	1,095
DFO	Fortune (Fish Plant Wharf - DFRP# 00494 - Uplands)	00490002	NL	39,428	7,262
DFO	Green Island	67681001	BC	1,578	4,550
DFO	Heavy metals around the lighthouse	05409001	QC	7,610	0
DFO	Hydrocarbons and metals	08269001	QC	18,614	0
DFO	Institute of Ocean Sciences and Victoria MCTS - Past Fuel Storage ASTs	21941001	BC	21,470	0
DFO	Ivory Island	67682001	BC	1,578	4,550
DFO	Killarney East (s. of Radio Beacon Bldg and around light house)	83054001	ON	25,184	4,444
DFO	Killarney Northwest (Surrounding the Lighthouse)	83490001	ON	25,184	4,444
DFO	Langara Island	19401001	BC	1,578	4,550
DFO	Lennard Island	17812001	BC	1,578	4,550
DFO	Machias Seal Island - Limiting access risk management site closed	03984001	NB	42,518	15,414
DFO	McColgan Point - Metal Impacts in Soil	00000852	NB	7,621	1,341
DFO	McInnes Island	67683001	BC	1,578	4,550
DFO	McNab Point - Lighthouse	56025001	ON	38,467	6,788
DFO	Merry Island	18460001	BC	1,578	4,550
DFO	Nootka Island	18086001	BC	1,578	4,550
DFO	Pachena Point	17810001	BC	1,578	4,550
DFO	Pacific Biological Station - Current Fuel Storage	17598001	BC	13,720	0
DFO	Pine Island	19125001	BC	1,578	4,550
DFO	Pinkut Creek Dumping Site - Pinkut Off Site Landfill	00023076	BC	39,220	66,190
DFO	Port Mouton (Metals in Soil near Light/Fmr. Dewelling)	00012299	NS	74,956	46,943
DFO	Powles Head - Area 2 - DFRP# 00007	00007002	NL	22,012	4,189

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
DFO	Prince Rupert, Seal Cove and Prince Rupert MCTS - Dump Site 2	00013093	BC	13,720	0
DFO	Pulteney Point	19084001	BC	1,578	4,550
DFO	Quatsino, Kains Island - Assistant keeper's house & engine room	19006001	BC	1,578	4,550
DFO	Queensport (Metals in Soil)	03389001	NS	67,216	91,200
DFO	Quinsam River Hatchery - Fuel spill near the Clarifier pump house	00002335	BC	74,790	470
DFO	Rocky Harbour (Uplands - DFRP# 01615)	00019302	NL	24,561	4,639
DFO	Rocky Point - Minor Aid	00018535	NL	13,289	2,650
DFO	Saugeen River Range Rear - Municipal Land (base of tower)	00014908	ON	9,179	1,620
DFO	Scarlett Point	19052001	BC	1,578	4,550
DFO	Sea Island Hovercraft Base - Former Aviation Fuel tanks and associated piping	84580001	BC	76,800	68,720
DFO	Seal Island - South Point Shore Area Soil Impacts	00017476	NS	1,985	10,177
DFO	Seal Island - South Point Shore Area Soil Impacts	00017477	NS	1,985	10,177
DFO	Seal Island - South Point Shore Area Soil Impacts	02389002	NS	1,985	10,177
DFO	Sheringham Point - Entire Site	00000879	BC	1,578	4,550
DFO	Stone Pier - metals	05668001	QC	19,383	0
DFO	Surgeon Cove Point - Fuel Storage (DFO 001)	34932001	NL	14,548	2,872
DFO	Tignish (Soil and GW Impacts)	00018015	PE	4,240	745
DFO	Trial Islands	17330001	BC	1,578	4,550
DFO	Victoria Base - Storage Yard Area	17385001	BC	108,910	84,200
DFO	Williams Lake LORAN-C - Hydrocarbons in soils	06813001	BC	17,630	0
DND	5 Wing Goose Bay, Dome Mountain	N7075001	NL	894,838	36,401
DND	5 Wing Goose Bay, Former underground tank adjacent to Building 345	01822076	NL	354,417	29,032
DND	5 Wing Goose Bay, Hydrant Area Fuel Plumes	01822043	NL	522,268	14,858
DND	5 Wing Goose Bay, Lower Tank Farm	01822094	NL	450,987	22,978
DND	5 Wing Goose Bay, Main Gate & Hamilton River Road Plume	N7077001	NL	1,065,098	9,355

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
DND	5 Wing Goose Bay, North escarpment plume	01822018	NL	633,982	9,905
DND	5 Wing Goose Bay, South Escarpment Landfills	01822087	NL	136,454	3,302
DND	5 Wing Goose Bay, South Escarpment Stillwaters	00008429	NL	133,860	129,241
DND	5 Wing Goose Bay, Survival Tank Farm	01822086	NL	887,269	11,556
DND	5 Wing Goose Bay, Upper Tank Farm - Fuel Recovery Site	01822085	NL	1,238,020	20,911
DND	Alert B-145 Cat House	20247019	NU	5,562	982
DND	Alert Baker's Dozen	20247035	NU	18,265	3,224
DND	Amherst Rifle Range (5403) - Range firing pts, butt stops	03186001	NS	20,263	3,576
DND	Atmosphere simulation (former dump), DRDC-South	29757003	QC	15,478	11,360
DND	Bldg 151 area	09540007	ON	281,861	49,740
DND	CFAD Bedford (802) - Dredge Material Disposal / Former Landfill	02859002	NS	48,906	12,223
DND	CFAD Bedford (820) - Former Landfill near B206	02859019	NS	38,426	6,781
DND	CFB Shearwater (213) - Landfill 3	02863013	NS	23,746	4,190
DND	CFB Shearwater (214) - Landfill 4	02863014	NS	15,831	2,794
DND	CFB Shearwater (216) - Fill Area West of Alpha Taxiway	02863016	NS	45,693	8,064
DND	CFB Shearwater (222B) - Former POL (D) and UST (S) - Building 212 and HY	02863045	NS	22,370	5,193
DND	CFB Shearwater (237) - Fill Area Near Track (Across from B100)	02863036	NS	216,571	39,464
DND	CFS ST John's (4710) - Pussey's Hill Rifle Range	00273001	NL	29,036	29,571
DND	COL-20 Colwood F-Jetty Intertidal & Parking Lot	00008530	BC	701,250	123,750
DND	DCD School (907) - Fire Fighting Training Area	03044007	NS	44,044	11,970
DND	DCD School (909) - Creek, Lagoon and Beach	03044009	NS	12,647	2,232
DND	DEW-Line - CAM-1Jenny Lind Island	C7017001	NU	208,531	36,800
DND	DEW-Line - CAM-3 Sheppard Bay	C7027001	NU	105,981	18,703
DND	DEW-Line - CAM-4 Pelly Bay	C7019001	NU	87,048	15,361
DND	DEW-Line - CAM-5 Mackar Inlet	C7020001	NU	3,341,666	589,706

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
DND	DEW-Line - DYE-M Cape Dyer	C7026001	NU	8,797,638	0
DND	DEW-Line - FOX-2 Longstaff Bluff	C7022001	NU	4,516,414	797,014
DND	DEW-Line - FOX-3 Dewar Lakes	C7023001	NU	6,079,314	1,072,820
DND	DEW-Line - FOX-4 Cape Hooper	C7024001	NU	2,966,452	523,492
DND	DEW-Line - FOX-5 Broughton Island	C7025001	NU	781,069	137,836
DND	DEW-Line - FOX-M Hall Beach	C7021001	NU	170,280	30,049
DND	DEW-Line - PIN-2 Cape Young	C7013001	NU	5,264,809	929,084
DND	DEW-Line - PIN-4 Byron Bay	C7015001	NU	4,433,172	782,324
DND	Drum Area West of Leitrim	00961004	NL	105,997	18,705
DND	Dry material (former dump for), DRDC-South	29757002	QC	17,942	11,795
DND	DY-4 Dockyard FMF Consolidation	17403003	BC	255,000	58,761
DND	ESQ 2 - Small Boats Float	00008492	BC	123,636	31,261
DND	Fire Fighting Training Area / Hazardous Materials Storage	09540012	ON	125,890	22,216
DND	Former CFS Moisie - Site Admin	N7096001	QC	52,365	13,092
DND	Former CFS Sydney	N7095001	NS	334,794	59,081
DND	Former skeet range	00008337	QC	40,839	12,957
DND	Great Village Transmitter Site (2001) - Existing AST	03146001	NS	60,438	10,666
DND	HMCS Champlain - Chicoutimi Naval Reserve	69920001	QC	41,888	7,392
DND	Land adjacent to the former well P-2	05906061	QC	6,712	1,184
DND	"MDR" (former dump for), DRDC-Trials	29757006	QC	106,053	18,934
DND	Moras Island, Accuracy Target and Stop Butt 600 yrd	06872012	QC	45,036	7,947
DND	Moras Island, bldg 88, maintenance bldg and sand dump area	06872002	QC	413,083	72,897
DND	Mount Apica - north slope	05613001	QC	11,308	1,996
DND	Oxidator Building (Back of Bldg)	20247006	NU	18,264	3,223
DND	Plateau (demolition site), DRDC-Trials	29757009	QC	71,347	12,810
DND	POL Compound	04089001	NB	43,874	7,742

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
DND	POL Compound - area of removed tanks	09540020	ON	28,395	5,011
DND	Refuelling Facility 2	10992006	ON	40,776	7,196
DND	Saglek Bay Sediments	N7040001	NL	164,010	38,172
DND	Sector for bldg 307, DRDC-Trials	29757005	QC	77,721	13,935
DND	Shearwater (207) - Former USTs at Hangar 3	02863007	NS	49,827	10,038
DND	Shearwater (230) - Buildings 31,31A,31B,32 (Mobile Support Maintenance)	02863030	NS	21,712	5,077
DND	Shirley Rd. Dump	04089010	NB	40,328	7,117
DND	Skeet Range	00008351	AB	36,397	8,523
DND	Small calibre (Former dump), DRDC-South	29757001	QC	20,407	12,230
DND	TCE Contamination - Valcartier	29757007	QC	646,678	0
DND	Wellington Anti-Tank Range	00008409	NB	40,858	7,210
EC	Eureka High Arctic Weather Station	00002747	NU	5,127	905
EC	Lansdowne House	12204000	ON	5,649	997
EC	Sable Island	07610122	NS	74,015	13,061
EC	Sainte-Marie Island	00001288	QC	6,116	1,079
EC	Wilmer Marsh (dumping area)	16096079	BC	219,826	38,793
HC	Moose Factory (Weeneebayko)	11789001	ON	62,688	0
NCC	Bayview	00022831	ON	29,207	5,154
NCC	Central LeBreton	00023983	ON	633,038	111,713
NCC	Contaminated Site 00000001	00000001	ON	91,112	16,079
NCC	Hurdman North	00022822	ON	20,207	3,566
NCC	LeBreton East	00023316	ON	35,308	6,231
NCC	Stanley Park West	00022858	ON	11,261	1,987
NRC	Center for Surface Transportation Technology - Landfill	00024306	ON	24,020	4,123
NRC	Dominion Radio Astrophysical Observatory-slag piles and other APECs	00024308	BC	12,643	2,138
NRC	Dominium Radio Astrophysical Observatory	00000907	BC	5,000	0

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
NRCan	Polar Continental Shelf Project - Tuktoyaktuk	00008314	NT	138,198	24,388
PCA	Bear Creek Compound	20009001	YT	83,448	15,080
PCA	Brewster Chalet	00023482	AB	2,608	777
PCA	Cape Gulch, Shoal Cove and Tallek Arm	00024581	NL	83,715	21,075
PCA	Creek at Bennett Lake	56505001	BC	23,625	4,174
PCA	Former Damage Control School of the Department of National Defense	32086001	NS	9,232	0
PCA	Former military disposal site	03640005	NS	949	644
PCA	G-I-02	56522002	QC	31,423	3,755
PCA	Hay Camp	15841001	AB	48,788	9,000
PCA	Illecillewaet Campground : Campsite # 30	00024128	BC	104,602	19,218
PCA	Ingonish Compound	03842004	NS	1,121	472
PCA	Kingston Inner Harbour Marsh	00023391	ON	15,162	2,676
PCA	Lobstick Maintenance Yard	14567002	SK	60,137	10,695
PCA	Maintenance Compound Fuel Spill Site	03640006	NS	1,208	292
PCA	Maligne Lake Warden Station	00008325	AB	6,624	1,165
PCA	Rogers Pass Maintenance Compound	18752001	BC	70,818	12,497
PCA	Rogers Pass West	00022913	BC	42,649	7,500
PCA	Russell Island Homestead	00024299	BC	27,187	11,488
PCA	Sandy Pond Boardwalk	00024576	NL	88,775	6,111
PCA	Site 1.2.1	00023376	QC	9,868	1,741
PCA	Site 13.10	06959076	QC	3,069	542
PCA	Site 13.11	06959080	QC	3,069	542
PCA	Site 13.5	06959034	QC	3,069	542
PCA	Site 13.6	06959009	QC	3,069	542
PCA	Site 13.7	06959082	QC	3,069	542
PCA	Site 13.9	06959011	QC	3,069	542
PCA	Site 14.4	06959085	QC	3,069	542

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
PCA	Site 14.7	06959014	QC	3,069	542
PCA	Site 15.2	06959086	QC	3,069	542
PCA	Site 15.4	06959017	QC	3,069	542
PCA	Site 15.7	06959089	QC	3,069	542
PCA	Upper Kangalaksiorvik Lake	00023472	NL	129,397	30,573
PWGSC	Alaska Highway - Fireside Maintenance Camp	09401080	BC	67,914	11,985
PWGSC	Alaska Highway - Fort Nelson Gravel Pit	09401030	BC	30,434	50,371
PWGSC	Alaska Highway - Liard Maintenance Camp	09401070	BC	464,061	311,893
PWGSC	Alaska Highway - Muncho Lake Maintenance Camp	09401060	BC	98,069	17,306
PWGSC	Alaska Highway - Sikanni Maintenance Camp	09401020	BC	162,438	28,665
PWGSC	Alaska Highway - Steamboat Maintenance Camp	09401040	BC	48,106	8,489
PWGSC	Alaska Highway - Toad River Maintenance Camp	09401050	BC	63,508	288,939
PWGSC	Alaska Highway - Wonowon Maintenance Camp	09401010	BC	51,240	9,042
PWGSC	Baie de Plaisance Former Wharf (Access Road)	09491001	QC	42,500	15,000
PWGSC	Contaminated Site 53673001	53673001	AB	734,491	2,070,009
PWGSC	Esquimalt Graving Dock	17410001	BC	1,634	3,130
PWGSC	Esquimalt Graving Dock	17410002	BC	14,705	28,172
PWGSC	Esquimalt Graving Dock	17410004	BC	8,169	15,651
PWGSC	Esquimalt Graving Dock	17410005	BC	7,080	13,564
PWGSC	Esquimalt Graving Dock	17410006	BC	15,794	30,258
PWGSC	Esquimalt Graving Dock	17410007	BC	1,784,739	314,954
PWGSC	Esquimalt Graving Dock	17410008	BC	7,080	13,564
PWGSC	New Westminster Railway Bridge	17026001	BC	133,079	23,485
PWGSC	Standards Building	16953001	BC	62,049	10,950
PWGSC	Unused Land (Prophet River)	22208001	BC	349,271	111,676
PWGSC	Unused Lot	19881001	BC	26,214	4,626

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
PWGSC	Vanier Park	19881001	BC	26,214	4,626
RCMP	Beaver Creek Detachment	20190016	YT	32,798	5,788
RCMP	Carcross RCMP	23322017	YT	28,570	5,042
RCMP	Fort Providence RCMP Detachment Site	20991001	NT	25,397	4,482
RCMP	Island Lake RCMP Detachment Site	00001056	MB	75,605	57,035
TC	Bushell Public Port Facility, Uplands and waterlot	14886001	SK	371	66
TC	Cambridge Bay Airport, Fire Training Area	N0010002	NU	36,672	6,472
TC	Edmonton Airport, Airside Operations and Maintenance Centre	15473005	AB	220,534	38,918
TC	Fort Nelson Airport, EBS Contaminated Sites	N0025001	BC	1,595,535	281,565
TC	Gander Airport, Former Gas Station Site	00967016	NL	47,819	8,439
TC	Gander Airport, Former Remote Radar Site	00967059	NL	13,394	2,364
TC	Gander Airport, Fuel Contaminated Site	00967043	NL	288,316	50,879
TC	Halifax Airport, Fire Training Area (FTA)	03057001	NS	19,547	3,450
TC	Inuvik Airport, Fire Training Area	N0014002	NT	5,933	1,047
TC	London Airport, Former Fire Fighting Training Areas	10855002	ON	2,102	371
TC	Nitchequon Airport	N0285001	QC	75,537	13,330
TC	Oshawa Harbour, Area A (West Wharf)	67590001	ON	142,526	25,152
TC	Oshawa Harbour, Area D (Rail Spur)	67590004	ON	25,248	4,456
TC	Oshawa Harbour, Area E (Marina)	67590005	ON	322,148	56,850
TC	Parcels in the village of Kuujjuaq	08389003	QC	53,890	9,510
TC	Resolute Bay Airport, Old Landfill/ Main Drum Cache	N0017003	NU	28,050	4,950
TC	Sediments - Gaspé wharf	72064003	QC	459,991	81,175
TC	St. John's Airport, Disposal Site 2 and Fire Training Area	00339002	NL	222,080	39,191
TC	St. John's Airport, Marine Fire Training Area	00339015	NL	6,617	1,168
TC	Thunder Bay Airport, Former firefighting training area	11943001	ON	60,323	10,645

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP expenditures ($)	Custodian expenditures ($)
TC	Victoria Harbour, Lot 2A: Middle Harbour Fill Site; Harbour Floor	17348003	BC	381,504	67,324
TC	Victoria Harbour, Lot 6A: Barclay Point; Rock Bay East Fill; Rock Bay North Fill; Bay Street East Fill; J-15 Bay Street Centre Fill; J-16 Bay S	17348008	BC	626,867	110,624
TC	Victoria Harbour, Lot 17: Victoria Harbour Floor; Point Ellice (Bay Street); Johnson Street; Point Ellice (Bay Street); East Selkirk; Macaulay	17348020	BC	1,047,456	184,845
TC	Watson Lake Airport, Former Tenant-Owned Maintenance Garage - APEC 7	N0281009	YT	262,838	46,383
TC	Whitehorse Airport, Air Terminal Building APEC 20A Parking Lot	20146001	YT	60,457	10,669
TC	Whitehorse Airport, Historic Military Base West of Runways - APEC 20C	00024670	YT	404,205	71,330
TC	Williams Lake Airport, Fire Training Areas - Former and Historic	N0033001	BC	267,923	47,281

APPENDIX D

Environmental Liability for Federal Contaminated Sites

ENVIRONMENTAL LIABILITY FOR FEDERAL CONTAMINATED SITES

Environmental liabilities are the estimated costs related to the remediation of contaminated sites where the Government of Canada is obligated or likely obligated to incur costs. A contingent liability is recorded when the Government's obligation to a contaminated site is unknown or unlikely or if the amount cannot be reasonably estimated.[6] Recording environmental liability is a requirement of the Treasury Board Directive on Contingencies; liabilities are reported annually in the Public Accounts of Canada.

According to Treasury Board of Canada Secretariat guidance, a liability for remediation of contaminated sites should be recognized when, at the financial reporting date, the following applies:

- an environmental standard exists;
- contamination exceeds the environmental standard;
- the Government:
  - owns the land; or
  - is directly responsible; or
  - accepts responsibility (e.g. when there is little, if any, discretion to avoid the obligation);
- it is expected that future economic benefits will be given up; and
- a reasonable estimate of the amount can be made.

An obligation for remediation of contaminated sites cannot be recognized as a liability unless all these criteria are satisfied.

Table D.1: Adjusted total environmental liability for contaminated sites (2011–2012)

	March 31, 2011 ($)	March 31, 2012 ($)	Difference ($)
Total liability for remediation of contaminated sites	4,354,071,472	4,772,902,706	418,831,234
Less:			
Sydney Tar Ponds	173,575,932	128,478,851	-45,097,081
Low Level Radioactive Waste Area Initiative	1,105,212,790	1,084,064,632	-21,148,158
Canadian Broadcasting Corporation	300,000	300,000	0
Enterprise Cape Breton Corporation	129,887,000	143,768,000	13,881,000
Marine Atlantic Inc.	0	73,000	73,000
VIA Rail Canada Inc.	1,627,000	185,000	-1,442,000
Adjusted total liability of contaminated sites	2,943,468,750	3,416,033,223	472,564,473

6. Public Accounts of Canada 2011-2012, Volume I (PWGSC, 2012)
http://www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html

Table D.2: Adjusted total environmental liability for contaminated sites (2011-2012), by participating custodian

Department	March 31, 2011 ($)	March 31, 2012 ($)	Difference ($)
Aboriginal Affairs and Northern Development Canada	2,015,473,705	2,370,969,519	355,495,814
Agriculture and Agri-Food Canada	1,461,817	1,193,853	-267,964
Canada Border Services Agency	2,285,800	2,420,800	135,000
Correctional Service of Canada	9,244,357	5,640,983	-3,603,374
Environment Canada	99,886,464	107,567,920	7,681,456
Fisheries and Oceans Canada	108,698,513	102,125,797	-6,572,716
Health Canada	225,000	167,037	-57,963
Jacques Cartier and Champlain Bridges Incorporated	1,000,000	28,100,000	27,100,000
National Defence	325,455,667	425,054,380	99,598,713
National Capital Commission	42,657,000	42,500,000	-157,000
National Research Council of Canada	79,829	636,995	557,166
Natural Resources Canada[1]	1,148,216	945,852	-202,364
Parks Canada Agency[2]	24,540,488	17,343,094	-7,197,394
Public Works and Government Services Canada[3]	142,589,113	153,133,201	10,544,088
Royal Canadian Mounted Police	4,044,525	2,167,917	-1,876,608
Transport Canada	164,678,256	156,065,875	-8,612,381
Total	**2,943,468,750**	**3,416,033,223**	**472,564,473**

Notes:
1 Does not include liability for the Low Level Radioactive Waste Area Initiative, as this is not part of FCSAP.
2 Includes liabilities associated with fuel storage tank systems.
3 Does not include liability for the Sydney Tar Ponds, as this is not part of FCSAP.

Table D.3: Changes in total liability for remediation of contaminated sites (2011-2012)

	March 31, 2011 ($)	March 31, 2012 ($)	Difference ($)
Opening balance	3,493,060,213	4,354,071,472	861,011,259
Less: expenditures reducing opening liabilities	366,429,461	274,260,194	-92,169,267
Add: changes in estimated remediation costs	1,100,787,486	172,542,359	-928,245,127
Add: new liability for sites not previously recorded	126,653,234	520,549,069	393,895,835
Closing balance	4,354,071,472	4,772,902,706	418,831,234