



Environment  
Canada

Environnement  
Canada



# **Evaluation of the Federal Contaminated Sites Action Plan**

**Final Report  
February 2014**

**Canada**



## Report Clearance Steps

Planning phase completed	June 2012
Report sent for management response	August 2013
Environment Canada's management response received	September 2013
Final draft report completed	September 2013
Report approved by Environment Canada's Deputy Minister	September 2013
Public Works and Government Services Canada's management response received	December 2013
Report approved by Public Works and Government Services Canada's Deputy Minister	February 2014

## Acronyms used in the report

AANDC	Aboriginal Affairs and Northern Development Canada
ADM	Assistant Deputy Minister
ASCS	Aquatic Sites Classification System
CCME	Canadian Council of Ministers of the Environment
CEAP	Canada's Economic Action Plan
CESD	Commissioner of the Environment and Sustainable Development
CSMWG	Contaminated Sites Management Working Group
DEW	Distant Early Warning
DFO	Fisheries and Oceans Canada
DG	Director General
DND	Department of National Defence
EC	Environment Canada
ES	Expert Support
ESD	Expert Support Department
FCSAP	Federal Contaminated Sites Action Plan
FCSI	Federal Contaminated Sites Inventory
HC	Health Canada
HSC	Highest Step Completed
IRWG	Interdepartmental Regional Working Group
NCR	National Capital Region
NCSCS	National Classification System for Contaminated Sites
NCSP	Northern Contaminated Sites Program
OCG	Office of the Comptroller General
PEWG	Program Evaluation Working Committee
PWGSC	Public Works and Government Services Canada
RPIC	Real Property Institute of Canada
R/RM	Remediation / Risk Management
TB	Treasury Board
TBS	Treasury Board Secretariat
TC	Transport Canada
TERL	Total Expenditures Reducing Liability

## **Acknowledgements**

The Evaluation Project Team would like to thank those individuals who contributed to this project, particularly members of the Program Evaluation Working Group (PEWG), as well as all interviewees who provided insights and comments crucial to this evaluation.

The Evaluation Project Team was led by Robert Tkaczyk, under the direction of the Environment Canada Evaluation Director, William Blois. This evaluation was conducted by EKOS Research Associates Ltd., and the final report was prepared by EKOS Research Associates Inc. and the Evaluation Division Project Team, Audit and Evaluation Branch, of Environment Canada (EC), as well as the PEWG, composed of program and evaluation representatives from all participating departments.

---

## Table of Contents

Executive Summary .....	vi
1.0 Introduction .....	1
2.0 Background .....	1
2.1 Program Profile .....	1
2.2 Governance Structure .....	3
2.3 Resource Allocation .....	5
2.4 A Note on Federal Contaminated Sites Remediation Liability .....	6
2.5 Program Logic Model .....	7
3.0 Evaluation Design .....	9
3.1 Purpose and Scope .....	9
3.2 Evaluation Approach and Methodology .....	9
3.3 Limitations .....	11
4.0 Findings .....	12
4.1 Relevance .....	12
4.1.1 Continued Need for the Program .....	12
4.1.2 Alignment with Federal Priorities and Departmental Strategic Outcomes .....	14
4.1.3 Consistency with Federal Roles and Responsibilities .....	16
4.2 Program Performance .....	17
4.2.1 Program Effectiveness .....	17
4.2.2 Program Efficiency and Economy .....	23
4.2.3 Performance and Financial Data .....	29
4.2.4 Secondary Impacts .....	32
4.2.5 Capacity Development .....	33
4.2.6 External Factors .....	35
4.2.7 Unintended Outcomes .....	36
4.2.8 Best Practices / Lessons Learned .....	36
5.0 Conclusions .....	38
6.0 Recommendations and Management Response .....	40
Annex 1 List of Participating Departments .....	44
Annex 2 Summary of Findings .....	45
Annex 3 Evaluation Matrix .....	47

## Executive Summary

This report presents the results of the Evaluation of the Federal Contaminated Sites Action Plan (FCSAP), which was led by Environment Canada's (EC's) Evaluation Division, Audit and Evaluation Branch, in 2011. This evaluation was undertaken in order to meet a Treasury Board (TB) requirement related to the renewal of funding for the final two years of Phase II of the program (2014-15 and 2015-16).

As per the 2009 TB *Policy on Evaluation*, the evaluation examines the relevance and performance (including effectiveness, efficiency and economy) of FCSAP. The evaluation builds on previous reviews of FCSAP, including the 2009 *Formative Evaluation of FCSAP* and the 2008 and 2012 Commissioner of the Environment and Sustainable Development assessment and status reports on federal contaminated sites. The period under study is from program inception (2005-06) to 2011-12, with a specific focus on FCSAP-funded contaminated sites that were identified, assessed and/or worked on during the fiscal years 2008-09 to 2011-12.

The FCSAP is a cost-shared program that assists federal custodian departments, agencies and consolidated Crown corporations to address contaminated sites for which they are responsible. FCSAP's primary objectives are to reduce environmental and human health risks from known federal contaminated sites and reduce associated federal financial liabilities in the Public Accounts of Canada, giving priority to higher-risk sites. Two types of projects can be funded under FCSAP: assessment, and remediation (including risk management) (R/RM).

The FCSAP program comprises three groups: the FCSAP Secretariat, responsible for administration of the program; Expert Support Departments (ESDs), which are science-based and technical departments that provide expertise to custodians; and custodians, which are the departments, agencies and consolidated Crown corporations responsible and accountable for the management of federal contaminated sites. Eighteen federal organizations are currently participating or have participated in FCSAP. Treasury Board Secretariat (TBS) provides the policy framework for the management of federal contaminated sites and supports the work of the FCSAP Secretariat. TBS is also responsible for the reporting of liabilities to the Public Accounts of Canada.

FCSAP was approved in 2005 as a 15-year program, following a commitment of \$3.5 billion in Budget 2004. Program funding and implementation will occur over three phases: Phase I (2005-06 to 2010-11); Phase II (2011-12 to 2015-16); and Phase III (2016-17 to 2019-20). During the period under study for the current evaluation, FCSAP expenditures totalled approximately \$1.8 billion (including \$1.63 billion in FCSAP funding and \$170 million in custodian cost-sharing).

## Findings and Conclusions

### *Relevance*

The evaluation evidence indicates that there is a continued need for the FCSAP program, in order to address significant work remaining to assess and classify suspected federal contaminated sites and to complete R/RM activities at priority sites to reduce risk and liability. FCSAP provides the primary source of funding for addressing federal contaminated sites, and the need for the program is likely to continue to the end of the 15-year program life cycle. The program is aligned with federal priorities and complements other broader environmental and economic strategies of the federal government. It is consistent with federal roles and responsibilities, and legislative obligations pertaining to environmental stewardship. The program is also consistent with the responsibilities of custodians for management of real property, including contaminated sites, and is consistent with the relevant mandate and expertise of each ESD.

**Performance – Effectiveness**

The program is on target to achieve immediate outcomes related to the development of risk reduction plans and reduction of uncertainty associated with risk. Questions remain as to whether the program will achieve its intermediate and ultimate outcomes related to completing remediation activities and closing FCSAP-eligible contaminated sites.

While liability is being reduced at FCSAP-funded sites, and a significant and increasing proportion of FCSAP funds are dedicated to R/RM, the total remediation liability for FCSAP sites has increased due to the addition of new FCSAP sites, and newly recorded or upward adjustments of existing remediation liability estimates. A handful of mega-sites within the FCSAP portfolio account for a large portion of the liability, however, and upward adjustments to liability for these sites significantly impact program-level progress on total liability reduction.

There is some evidence to indicate that secondary impacts of the program in the areas of employment and training are being achieved. There is mixed evidence pertaining to the use of innovative approaches to deal with FCSAP-contaminated sites.

**Performance – Efficiency and Economy**

At the midway mark in the program, given current forecasts, it is unlikely that all risks and financial liabilities associated with FCSAP-eligible sites will be addressed within the current program parameters. The upward trajectory in financial liabilities suggests a potential gap between the demand for R/RM funding and available program funds. At the same time, budgetary restraints within departments are creating challenges for some custodians to leverage FCSAP funds in order to address contaminated sites that fall outside the FCSAP eligibility criteria or sites that will require funding well beyond the end of FCSAP in 2020 (i.e., for R/RM and long-term monitoring).

Based on a number of indicators, the efficiency and financial management of the FCSAP program are improving over time. A number of factors, such as central coordination and shared, science-based tools and resources, contribute to program efficiency. Factors that detract from efficiency at the program level are often outside the control of the program (e.g., laborious/restrictive processes to manage program funds, and economic factors). Factors that detract from efficiency at the site level suggest opportunities for

improvement, including more consistent decision making in the selection of remedial options across departments.

Improving procurement tools and resources was commonly cited as a priority in the evaluation by key informants and experts. Based on evidence provided by Public Works and Government Services Canada (PWGSC), these procurement tools and resources (including national, regional and department-specific Supply Arrangements and Standing Offer Agreements, a majority of which are multi-year instruments) have been in existence since at least 2010 and are available to custodians. This suggests a lack of awareness on the part of custodians.

A number of lines of evidence suggest that remediation of contaminated sites has tended to rely on conventional “dig and dump” solutions because of the relative immediacy of their impacts on liability reductions. Key informants indicated a need to support custodians in more effective decision making about remedial solutions, including the relative impact of risk management and remediation activities on liability.

The FCSAP program delivery model is appropriate to support achievement of intended outcomes and has been delivered as intended. Evidence suggests that FCSAP tools, resources and funds, including enhanced funding from Canada’s Economic Action Plan, support custodians’ efforts to assess and undertake R/RM of contaminated sites, although some suggestions to increase access to and clarity of some of the FCSAP tools and guidance were noted. The horizontal governance and management of the program are generally seen to be strong. The evaluation did not reveal any alternative, more economical models to FCSAP.

Excessive reporting burden early in the program’s history is being addressed, and performance measures have been enhanced. However, challenges remain in consistently and reliably recording the remediation liability of contaminated sites and ensuring that communications about program performance are balanced between remediation liability reduction and other indicators of performance (e.g., reduction of risk, socio-economic benefits).

The following are recommendations based on the evaluation findings and conclusions:

- 1) EC, FCSAP Secretariat, should initiate an exercise to determine if a re-focusing of the program’s resources is required to effectively deploy the remaining FCSAP funds to reduce human health / ecological risks and financial liabilities for the program’s duration.**
- 2) PWGSC, with support from the FCSAP Secretariat, should review opportunities to promote awareness and understanding of available procurement tools and resources among FCSAP custodian departments, agencies and consolidated Crown corporations.**
- 3) EC, FCSAP Secretariat, should review opportunities to support custodians in the decision-making process regarding whether to risk manage or remediate their contaminated sites to achieve FCSAP intended outcomes.**



- 4) EC, FCSAP Secretariat, in consultation with TBS, should work to provide guidance to custodians so that they can improve the consistency and reliability of their estimates of remediation liability for contaminated sites.**

EC's Assistant Deputy Minister, Environmental Stewardship Branch, agrees with the recommendations for which EC is responsible (recommendations #1, #3 and #4), and has developed a management response that addresses the recommendations. The Deputy Minister for PWGSC accepts the recommendation for which PWGSC is responsible (recommendation #2) and has approved a management response that appropriately addresses this recommendation. The full text of these management responses can be found in Section 6 of the report.

## 1.0 Introduction

This report presents the results of the Evaluation of the Federal Contaminated Sites Action Plan (FCSAP), which was led by Environment Canada's (EC's) Evaluation Division, Audit and Evaluation Branch, in 2011. This evaluation was undertaken in order to meet a Treasury Board (TB) requirement related to the renewal of funding for the final two years of Phase II of the program (2014-15 and 2015-16). The period under study is from program inception (2005-06) to 2011-12.

The document is organized as follows: Section 2.0 provides background information on FCSAP; Section 3.0 presents the evaluation design, including the purpose and scope, as well as the approach and methods used to conduct the evaluation; Section 4.0 and 5.0 lay out, respectively, the evaluation's findings and conclusions; Section 6.0 presents the recommendations and management response.

## 2.0 Background

Contaminated sites are those where substances occur at concentrations above background levels, that pose or are likely to pose an immediate or long-term hazard to human health or the environment, or that exceed levels specified in policies and regulations.<sup>1</sup> These sites are often a legacy of past practices where the environmental implications of undertaking certain activities were not fully appreciated. Federal contaminated sites are located on lands owned or leased by the federal government, and sites on non-federal lands where the federal government has accepted full responsibility for the contamination. As of March 2012, the federal government had identified almost 22 000 actual or suspected federal contaminated sites (48 percent of which are now closed).<sup>2</sup>

### 2.1 Program Profile

FCSAP is a cost-shared program that assists federal custodians to address contaminated sites for which they are responsible. FCSAP's primary objectives are to reduce environmental and human health risks from known federal contaminated sites and to reduce associated federal financial liabilities<sup>3</sup> in the Public Accounts of Canada. FCSAP contributes to the assessment and remediation / risk management (R/RM)<sup>4</sup> of federal contaminated sites, with priority given to higher-risk sites.

---

<sup>1</sup> <http://www.tbs-sct.gc.ca/fcsi-rscf/home-accueil-eng.aspx>. Accessed November 2012.

<sup>2</sup> A FCSAP site is considered closed when it has been assessed and requires no further action or, for sites where R/RM is required, when Step 9 or 10 of the 10-Step Process is completed. Please see footnote 5 for a complete list of steps in the 10-Step Process.

<sup>3</sup> Public Sector Standard PS 3200 "Liabilities" defines the word liability in PS 3200.05 as follows: "Liabilities are present obligations of a government to others arising from past transactions or events, the settlement of which is expected to result in the future sacrifice of economic benefits."

<sup>4</sup> Risk management refers to the selection and implementation of a risk-control approach, followed by monitoring and evaluation of its effectiveness. It may include direct remedial actions or other strategies that reduce the probability, intensity, frequency or duration of the exposure to contamination. Remediation improves a contaminated site to prevent, minimize or mitigate damage to human health or the environment. Remediation involves developing and applying a planned approach that removes, destroys or contains contaminants (EC, *FCSAP Performance Measurement Strategy*, January 2013).

Three groups are involved in delivery of the FCSAP program: the FCSAP Secretariat, responsible for program administration; Expert Support Departments (ESDs), which are science-based and technical departments that provide expertise to custodians; and custodians, which are the departments, agencies and consolidated Crown corporations responsible and accountable for the management of federal contaminated sites.

There are two types of funding under FCSAP:

- Assessment, which involves characterization and classification of a site following a detailed analysis of the nature, source and extent of contamination and the associated risks to human health and the environment; and
- Remediation (including risk management), wherein various alternatives for addressing priority contaminated sites are developed and implemented to reduce risks to human health and the environment.

The approved annual allocation of site assessment funding to custodians is spent in accordance with the FCSAP Prioritization for Assessment Tool or a custodian's internal priority-setting tool. Sites eligible for assessment must have documented reasons that support potential contamination (from Step 1 of the 10-Step Process)<sup>5</sup> and must be identified as a suspected site in the Treasury Board Secretariat (TBS) Federal Contaminated Sites Inventory (FCSI),<sup>6</sup> in compliance with the TB Reporting Standard on Real Property.

The FCSAP eligibility criteria for R/RM sites are as follows<sup>7</sup>:

- All sites submitted for FCSAP R/RM funding must meet the TB definition of a contaminated site.
- The site must be on lands owned or leased by the federal government, or must be on non-federal lands for which the federal government has accepted full responsibility for the contamination, which, as a general rule, will have occurred prior to April 1, 1998.
- Sites proposed for R/RM must be classified as Class 1 (high priority for action)<sup>8</sup> or Class 2 (medium priority for action) under the 2008 Canadian Council of Ministers of the Environment (CCME) National Classification System for Contaminated Sites (NCSCS) or the 2009 FCSAP Aquatic Sites Classification System (ASCS). Under Phase II of FCSAP (2011-12 to 2015-16), only Class 2 sites with remediation expenditures prior to April 1, 2011 are eligible for remediation funding.<sup>9</sup>

---

<sup>5</sup> The federal process for contaminated sites management includes: Step 1 – Identify suspected sites; Step 2 – Historical review; Step 3 – Conduct initial testing program; Step 4 – Site classification; Step 5 – Detailed testing program; Step 6 – Update site classification; Step 7 – Develop a remediation and/or risk management strategy; Step 8 – Implement the remediation and/or risk management strategy; Step 9 – Conduct confirmatory sampling and prepare final report; and Step 10 – Provide long-term monitoring, if required. From EC, Contaminated Sites Management Working Group, *A Federal Approach to Contaminated Sites*, 1999.

<sup>6</sup> The FCSI is a publicly available inventory of all known and suspected federal contaminated sites.

<sup>7</sup> EC, FCSAP Secretariat. *Federal Contaminated Sites Action Plan (FCSAP) Guidance Manual*, 2008. Internal document.

<sup>8</sup> Priority for action could refer to a need for further site characterization, risk assessment, or R/RM.

<sup>9</sup> Also under Phase II, a cap of \$40 million on assessment expenditures was instituted.

- There must be an actual liability associated with the site reported in the Public Accounts of Canada. In addition, a complete and accurate site record, including annual expenditure and liability data, must have been recorded in the FCSI.<sup>10</sup>

Custodians must also ensure that R/RM FCSAP expenditures are for eligible activities (as outlined in the FCSAP Eligible Costs guidance document) and that R/RM sites have been added to the Site Priority List.

R/RM projects are prioritized using various processes by each custodian and assigned a priority according to the nature, severity and immediacy of the risk to human health and safety as well as to the environment. The proposed funding allocations for site assessment, R/RM, and program management are established by the FCSAP Secretariat in consultation with custodians and ESDs. The proposed funding envelope and annual allocations are then recommended by the Federal Contaminated Sites Director General (DG) and Assistant Deputy Minister (ADM) Steering Committees for approval by TB.

## **2.2 Governance Structure**

Responsibility for the management, assessment and remediation of federal contaminated sites rests with custodians. Eighteen federal departments, agencies and consolidated Crown corporations are participating in FCSAP (Annex 1). Custodians identify, assess and classify sites for priority, obtain regulatory approvals, coordinate with other government departments, conduct public outreach, and implement projects. R/RM of sites may include removal or containment of contaminated materials, restricting access, or monitoring the site.<sup>11</sup> Program activity, expenditures and remediation liability associated with the site<sup>12</sup> are recorded annually in the FCSI by the custodian.

Housed in EC (Environmental Protection Operations Directorate), the FCSAP Secretariat, with support from TBS, is responsible for program administration, including leading and coordinating its development and ongoing delivery, coordinating the site submission process (including project eligibility review and updates to the Site Priority List), resolving program issues, monitoring program performance, project planning and reporting processes, and information management. The Secretariat also provides clerical and administrative services to the Federal Contaminated Sites Committees.

TBS (Real Property and Material Policy Division) provides the policy framework for management of federal contaminated sites, and supports the FCSAP Secretariat's work by providing policy advice and ensuring program consistency with TB real property policies and policy instruments. TBS administers and maintains the FCSI, which supports the reporting of liabilities to the Public Accounts of Canada.

---

<sup>10</sup> The program eligibility criteria have been adjusted somewhat to allow custodians to finish Step 7 before booking a liability.

<sup>11</sup> More information on the federal approach to management of contaminated sites may be found at: <http://www.federalcontaminatedsites.gc.ca/publications/fa-af/fa-af-eng.pdf>.

<sup>12</sup> Liability reflects the present value of estimated cash flows required to remediate the sites to an acceptable condition according to the current minimum standard for federal use prior to contamination or for the intended federal use, whichever is less, where such amounts can be reasonably estimated.

The science-based ESDs, comprising EC, Health Canada (HC), and Fisheries and Oceans Canada (DFO), contribute to the development of a scientifically credible framework for addressing federal contaminated sites, including tools, guidance and training for managing priority sites in a consistent manner across the federal government. The ESDs review site assessments and classification, and are usually further engaged in reviewing documents and providing science-based advice to custodians at different steps during a contaminated site project life-cycle. EC coordinates the provision of expert support services to custodians through a single-window via the FCSAP Secretariat. Public Works and Government Services Canada (PWGSC), the fourth ESD under FCSAP, is responsible for improvements to the procurement process by developing project management tools, best practice documents, and guidance to support custodians and the FCSAP Secretariat.

The FCSAP governance structure is intended to promote horizontal collaboration and administrative oversight through the FCSAP Secretariat, and through a number of interdepartmental committees, sub-committees and working groups. Key governance bodies include the following:

- **Federal Contaminated Sites Committees** – EC and TBS co-chair the ADM-level Federal Contaminated Sites Steering Committee, whose mandate is to provide strategic direction for FCSAP in areas such as program design and funding parameters. Support at the operational level is provided by a DG Committee, which handles operational and tactical issues, provides oversight and direction to the program, and approves priority sites for remediation. Membership includes all federal departments with an interest in management of contaminated sites (including departments participating in the FCSAP program and a small number of departments with contaminated sites that do not receive FCSAP funds).
- **Contaminated Sites Management Working Group (CSMWG)** – EC and the Department of National Defence (DND) co-chair the CSMWG, a working-level committee representing all custodians and the four ESDs, as well as other federal representatives with an interest in contaminated sites management. This interdepartmental working group contributes to the development of procedures, tools and guidance, and other key program outputs. In addition, the CSMWG reviews overall custodian and ESD funding proposals and related workplans. Sub-committees and working groups provide support to various program aspects.
- **Interdepartmental Regional Working Groups (IRWGs)** – IRWGs provide a mechanism to keep regional custodians apprised of news and updates from the FCSAP Secretariat and ESDs on policies, guidance, tools and upcoming training, and to provide input from regional custodians to the FCSAP Secretariat and ESDs' headquarters. IRWGs provide a venue to facilitate a regionally and nationally consistent application of the program.

## 2.3 Resource Allocation

FCSAP was approved in 2005 as a 15-year program following a commitment of \$3.5 billion in Budget 2004.<sup>13</sup> Over the first six years (Phase I) (2005-06 to 2010-11), approximately \$1.8 billion (including \$1.63 billion in FCSAP funding and \$170 million in custodian cost-sharing) was spent on remediation activities at approximately 1400 sites and on assessments at approximately 9000 other sites across the country. In January 2009, accelerated action over a two-year period (2009-10 to 2010-11) on FCSAP was announced in Canada's Economic Action Plan (CEAP) as part of an economic stimulus package. The CEAP provided an additional \$80.5 million in 2009-10 and 2010-11 for program management and additional assessments of federal contaminated sites, and provided the authority for custodians to access up to \$165 million over two years to accelerate R/RM of FCSAP sites.

Phase II of FCSAP, approved in June 2011, covers the fiscal years 2011-12 to 2015-16. Approximately \$1 billion will be invested over the first three years for Phase II, for planned remediation activities at 1100 priority sites and assessment at another 1650 sites. Budget 2011 also announced an additional \$149 million for assessment activities and program management to support Phase II of FCSAP. Phase III of the program would cover the fiscal years 2016-17 to 2019-20.

Actual expenditures<sup>14</sup> under the FCSAP program for both Phase I and II (up to 2011-12) are presented below. In total, \$1.63 billion has been expended under the program, the bulk of which (\$1.48 billion) was for assessment and R/RM of sites. When the custodian cost-sharing is included (approximately 10 percent of FCSAP program expenditures), the total expenditure on FCSAP-funded sites is approximately \$1.82 billion.

---

<sup>13</sup> Prior to FCSAP, the federal government announced funding of \$175 million over two years (2003-04 and 2004-05) to address contaminated sites. This FCSAP predecessor program was known as the Federal Contaminated Sites Accelerated Action Plan.

<sup>14</sup> FCSAP also presently has a proportion of grants and contributions administered under separate contribution programs led by Aboriginal Affairs and Northern Development Canada (AANDC). These will not be included as part of this evaluation, but will be examined separately as identified by AANDC's departmental evaluation plan. Under Phase I, there were two additional contribution programs administered by HC, which were evaluated in HC-led evaluations that were approved in 2011 and 2012, and not renewed for Phase II.

**Table 1: FCSAP Expenditures, 2005-06 to 2011-12 (in \$millions)**

	<b>Phase 1 2005-06 to 2010-11</b>	<b>Phase 2 2011-12</b>	<b>Total 2005-06 to 2011-12</b>
Federal Contaminated Sites Assessment and R/RM Expenditures	\$1,304.5	\$176.5	\$1,481.0
R/RM Expenditures	\$1,124.7	\$166.0	\$1,290.7
Assessment Expenditures	\$179.8	\$10.5	\$190.3
FCSAP Program Management Expenditures <sup>15</sup>	\$129.5	\$20.7	\$150.2
Sum of FCSAP Expenditures	\$1,434	\$197.2	\$1,631.2
Total Custodian Cost-Shared Assessment and R/RM Expenditures	\$147.6	\$32.2	\$179.8
R/RM Expenditures	\$122.9	\$27.6	\$150.5
Assessment Expenditures	\$24.7	\$4.6	\$29.3
PWGSC Accommodations	\$6.9	\$1.5	\$8.4
Total Expenditures	\$1,588.5	\$230.9	\$1,819.4

Source: Program documents provided by the FCSAP Secretariat (as of February 28, 2013)

During Phase I, FCSAP funding was provided on a cost-shared basis with custodians, in the following ratios: 80/20 (FCSAP to custodian) for site assessments (to a maximum of \$25 million per year); 80/20 for project R/RM costs, up to \$10 million per year; and 90/10 for project costs over \$10 million. For projects funded during the two years of CEAP funding (2009-10 to 2010-11), the cost-share requirement and \$25 million cap per year on assessment funding were removed. In Phase II, site assessment costs will be cost-shared at a ratio of 80/20, to a five-year maximum of \$40 million. Remediation project costs up to \$90 million will be shared on an 85/15 ratio. In exceptional cases, where project cost estimates exceed \$90 million, FCSAP may cover 100 percent of project costs, subject to TB approval.

## **2.4 A Note on Federal Contaminated Sites Remediation Liability**

According to the Public Accounts of Canada, environmental liabilities consist of “estimated costs related to the remediation of environmentally contaminated sites as well as estimated costs related to obligations associated with future asset restoration.”<sup>16</sup> For contaminated sites, the total expense for remediation is recorded based on management’s best estimates. Remediation liability accrues when the contamination occurs, or when the Government becomes aware of the contamination and is obligated (or is likely obligated) to incur costs associated with remediation of the contaminated site. The remediation liability accorded to a site reflects the present value of estimated cash flows required to remediate it to an acceptable condition.<sup>17</sup>

<sup>15</sup> Includes actual expenditures for all components of the program: the FCSAP Secretariat, ESDs and custodians.

<sup>16</sup> Public Accounts of Canada 2010-11, Volume 1, Section 2, p. 2.11.

<sup>17</sup> An “acceptable condition” is defined as “the current minimum standard for federal use prior to contamination or for the intended federal use, whichever is less, where such amounts can be reasonably estimated.” Ibid.

Remediation liability is recorded in the FCSI, the central record of all known or suspected contaminated sites for which federal departments, agencies or consolidated Crown corporations are accountable. The FCSI is a means by which the Government of Canada maintains a record of the contaminated sites for which it has accepted financial responsibility.

The FCSI captures several figures to track the liability of a site: the opening liability of the contaminated site for the year being reported; contingent liability (based on whether the Government is likely obligated to remediate the site); total adjustment to liability; and closing liability. Closing liability is the remaining liability associated with a site, for which the federal government will remain responsible while these lands are publicly owned. Closing liability is calculated based on the following formula: Opening Liability minus Total Expenditure Reducing Liability (TERL, which is the portion of remediation expenditures that are liability reducing) plus Total Adjustment to Liability. Remediation liability figures are reconciled to Public Accounts annually, and controls within the FCSI are in place to minimize errors in data entry (e.g., numbers for opening/closing liability; liability reduction must reconcile for each site).

## **2.5 Program Logic Model**

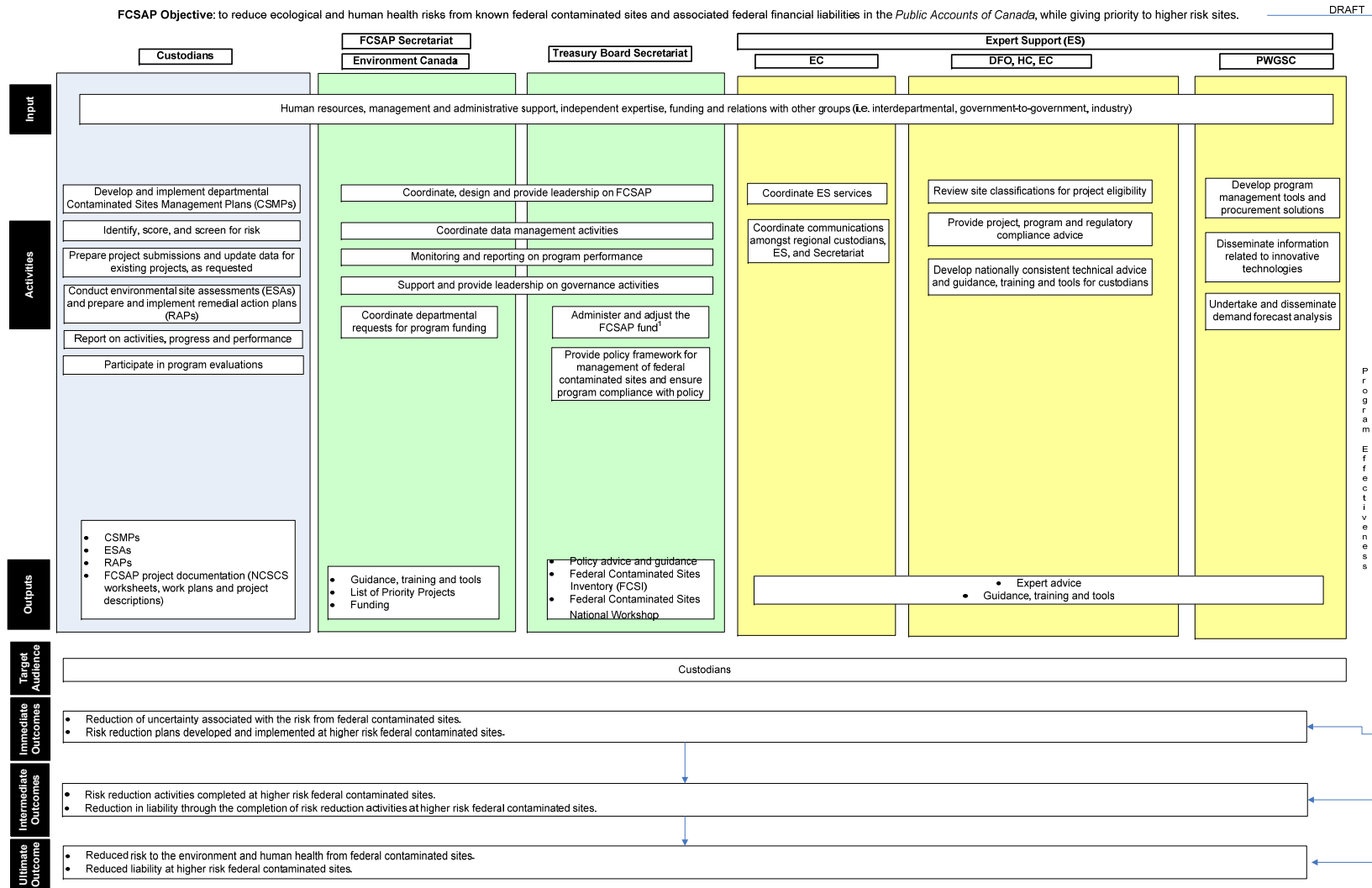
Figure 1 shows the program logic model for FCSAP, which depicts how the activities and outputs of the program relate to immediate, intermediate and ultimate outcomes.<sup>18</sup>

---

<sup>18</sup> EC, *Federal Contaminated Sites Action Plan (FCSAP) Phase II Performance Measurement Strategy*, January 2012.



Figure 1: FCSAP Logic Model



<sup>1</sup> These activities are carried out by the responsible program sector or other TBS policy centers.

## 3.0 Evaluation Design

### 3.1 Purpose and Scope

In accordance with the 2009 *TB Policy on Evaluation*, this evaluation examines the relevance and performance (including effectiveness, efficiency and economy) of FCSAP. The evaluation matrix is included in Annex 2. The evaluation's scope is horizontal in nature and includes the three core program components (i.e., the FCSAP Secretariat, ESDs, and participating custodians), with an emphasis on results achieved. The period under study is from program inception (2005-06) to 2011-12,<sup>19</sup> with a specific focus on FCSAP-funded contaminated sites that were identified, assessed and/or worked on during the fiscal years 2008-09 to 2011-12.

A horizontal FCSAP Program Evaluation Working Group (PEWG) was created with the mandate to facilitate and guide the evaluation planning, conducting and reporting phases of the evaluation at the working level. This committee comprised evaluation and program representatives from all 18 participating organizations (Annex 1). Evaluation representatives of the PEWG were responsible for directing and managing the execution of the evaluation in accordance with the 2009 *TB Policy on Evaluation*.

### 3.2 Evaluation Approach and Methodology

This evaluation builds on previous reviews of FCSAP, including the 2009 *Formative Evaluation of the FCSAP* and the 2008 and 2012 Commissioner of the Environment and Sustainable Development (CESD) status and audit reports on federal contaminated sites. While the formative evaluation focused on a sub-group of participating departments (EC, DFO, TBS, Transport Canada [TC], AANDC, PWGSC and DND), the current evaluation includes the activities of all participating departments, agencies and consolidated Crown corporations.<sup>20</sup> The following data collection methodologies were employed, with evidence drawn from these methods triangulated to develop findings and conclusions.<sup>21</sup>

i) **Document review:** Key documents, including Government of Canada and departmental publications, previous related evaluations and audits, TB policies, program documents (e.g., annual reports) and published data related to FCSAP were gathered, and documented in an inventory; and then extractions from the documents were compiled based on their contribution to each of the evaluation questions. This data collection method addressed evaluation questions pertaining to relevance and performance. In addition, financial data maintained by the FCSAP Secretariat were reviewed to address questions related to program efficiency and economy.

---

<sup>19</sup> The 2009 Formative Evaluation of FCSAP considered all FCSAP sites and projects that had been identified, assessed and/or worked on during the fiscal years of 2005-06 and 2006-07.

<sup>20</sup> Please see Annex 1 for a list of all participating departments.

<sup>21</sup> See the Data Collection Instruments Technical Appendix, which includes all the methodological instruments developed as part of the evaluation (e.g., key informant interview guide, case study interview guide, expert panel discussion guide).

ii) **Comparative program analysis:** A review of four contaminated sites programs in other jurisdictions (three Canadian provincial jurisdictions<sup>22</sup> and the U.S. Superfund) was conducted through document review and interviews with jurisdictional representatives. The analysis addressed evaluation questions related to efficiency and economy (program alternatives) by examining the assessment and management of contaminated sites in other settings.

iii) **Program administrative data review:** Analyses of FCSI data contributed to addressing questions of performance (effectiveness), particularly related to program progress in planning and completing R/RM of contaminated sites, and reduction of risks to human health, the environment and financial liabilities associated with federal contaminated sites. The FCSI data that are presented provide a snapshot of the FCSAP program as of March 2012.

iv) **Key informant interviews:** Using semi-structured interview guides, 57 key informant interviews were conducted in person or by telephone, to gather detailed information related to all evaluation questions and issues. Respondents included: senior managers (5), FCSAP Secretariat/TBS (2), federal custodians (EC National Capital Region [NCR] and other regions; 27), ESDs (NCR and regions; 10), and external stakeholders (industry, provinces/territories, experts; 13).

To ensure a common understanding of the terms used in the analysis and reporting of interview results, the following broad guidelines have been used:

- “A few/several / a small number of interviewees” = less than 25%;
- “Some interviewees” = 25 to 44%;
- “About half” = 45 to 54%;
- “A majority of interviewees” = 55 to 74%;
- “Most interviewees” = 75 to 94%; and
- “Almost all interviewees” = 95% or more.

v) **Case studies:** Three case studies were conducted to illustrate the delivery of the FCSAP program at the site/project level and the manner in which program outcomes are achieved (including challenges). Sites were selected based on a number of criteria, including stage of implementation and size and nature of the contaminated site. Selected sites included Victoria Harbour (TC), Tundra Mine (AANDC), and the Fox-Main Hall Beach Distant Early Warning (DEW) Line site (DND). In addition, four case studies were conducted of emerging themes in order to provide more detailed evidence on: remediation liability; use of R/RM actions to address contaminated sites; long-term monitoring of contaminated sites; and TB policy coherence with respect to management of contaminated sites. Data collection for each case study involved a compilation and review of relevant information from key documents and interviews, supplemented with additional key informant responses (through interviews or self-completed interview guides).

vi) **Expert panel:** An expert panel was convened to provide input on the preliminary study findings. Five experts from academia and industry participated in an online forum

---

<sup>22</sup> British Columbia, Manitoba, Nova Scotia.

to address evaluation questions related to performance and economy (program alternatives).

### **3.3 Limitations**

A number of challenges were experienced pertaining to the design, data collection and analysis of the evaluation evidence. These challenges, as well as related limitations and strategies used to mitigate their impact, are outlined below.

- 1) Given that the FCSAP program is internal to government, much of the information that was gathered for this evaluation is drawn from internal sources: program documentation, as well as interviews with federal program managers and staff from central/coordinating groups, ESDs and custodians. In order to mitigate the effect of any internal bias, external stakeholders (e.g., provinces/territories, industry) were included as key informants and case study respondents, to the extent possible. As well, an expert panel was convened to provide external input on evaluation findings. Limited input (just a few of the 57 key informant interviews) was obtained from community representatives, including Aboriginal stakeholders, due to the difficulty in identifying key contacts, and so this perspective is absent in informing evaluation findings and conclusions.
- 2) Although the evaluation drew heavily from program administrative data (FCSI) that documents progress in assessment, completion of R/RM, and reduction in remediation liability, guidance for custodians on how to estimate remediation liability and populate the FCSI underwent revisions during the life of the program, thus limiting the comparability of program expenditure and remediation liability data and the ability to conduct year-to-year comparisons. Where FCSI data were weak, alternative FCSAP program management data, where available, were used as a supplementary source.
- 3) There were challenges in securing candidate sites for the case study component of the evaluation. Although a list of potential case study sites and alternates was developed, custodians were sometimes reluctant to commit to the endeavour, most often reported to be due to workload issues, or aspects of the site itself (e.g., divestiture to a third party). As a result, illustrative examples of some types of FCSAP activities (e.g., implementation of FCSAP by smaller departments) are absent, although key informant data has been utilized as an alternate data source. The case studies that were conducted illustrate FCSAP activities in a number of other dimensions, such as aquatic/terrestrial sites, small and large liability sites, and sites at the assessment and remediation stage.

## 4.0 Findings

This section presents the study findings by evaluation issue (relevance and performance) and the related evaluation questions. For each evaluation question, a rating is provided based on the evaluation findings. The rating statements and their significance are outlined in Table 2. A summary of ratings for the evaluation issues and questions is presented in Annex 3.

**Table 2: Definitions of Standard Rating Statements**

Statement	Definition
Acceptable	The program has demonstrated that it has met the expectations with respect to the issue area.
Opportunity for Improvement	The program has demonstrated that it has made progress to meet the expectations with respect to the issue area, but attention is still needed.
Attention Required	The program has not demonstrated that it has made progress to meet the expectations with respect to the issue area, and attention is needed on a priority basis.
Not Applicable	A rating is not applicable.

### 4.1 Relevance

#### 4.1.1 Continued Need for the Program

Evaluation Issue: Relevance	Lines of Evidence	Rating
1. Is there a continued need for FCSAP?	Document review, administrative data review	Acceptable

**There is a continued need for the FCSAP program in order to address significant work remaining to assess and classify suspected federal contaminated sites, and to complete R/RM activities at priority sites in order to reduce risk and liability.**

- The FCSAP program was established partially as a response to the 2002 Report of the CESD, which was critical of the lack of progress on federal contaminated sites.<sup>23</sup> If not managed properly, contaminated sites can pose risks to human health and the environment, through exposure to toxic substances in soil, water or air.
- At the inception of the FCSAP program in 2005, it was estimated that there were 6200 suspected or known contaminated sites.<sup>24</sup> Almost 22 000 sites are now listed on the FCSI (48 percent of which are closed).<sup>25</sup>

<sup>23</sup> Office of the Auditor General of Canada. 2002. *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons, Chapter 2: The Legacy of Federal Contaminated Sites.*

<sup>24</sup> This estimate included 4200 known sites reported in the FCSI, plus an estimate of approximately 2000 additional suspected sites that were not yet reported to the inventory.

<sup>25</sup> An FCSAP site is considered closed when it has been assessed and requires no further action or, for sites where R/RM is required, when Step 9 or 10 of the 10-Step Process is completed.

**Table 3: Site Closure<sup>26</sup> (as of March 2012)**

	Total	Total closed	Percentage closed	Percentage closed following completion of R/RM (Step 8, 9, 10)
<b>All FCSAP sites</b>	<b>9410</b>	<b>4178</b>	<b>44</b>	<b>20<sup>27</sup></b>
<b>FCSAP Class 1 and Class 2 Sites</b>	2379	823	35	82
Class 1	1013	503	50	89
Class 2	1366	320	23	72

Source: Federal Contaminated Sites Inventory

- Of the approximately 22 000 suspected or known federal contaminated sites, 9410 are or have been funded by FCSAP. Among FCSAP-funded sites (as shown in Table 3), 44 percent are closed, though a substantial portion of these sites (80 percent) were closed following assessment without R/RM work being completed (i.e., no further action was required following assessment).
- Of FCSAP sites that are currently open (5232 suspected or active sites), 2450 (47 percent) have not yet been classified<sup>28</sup> (Step 3 of the 10-Step Process).<sup>29</sup>
- The 2012 CESD review and assessment of federal contaminated sites concluded that, given the number of sites that remain to be assessed, the Government cannot know the full extent of potential risks to human health and the environment posed by federal contaminated sites.<sup>30</sup>
- Of the Class 1 and 2 active sites in the FCSAP inventory (2379 sites), 1352 sites (57 percent) have not yet completed remediation activities.
- The total federal remediation liability for all federal contaminated sites at the end of 2011-12 was approximately \$4.8 billion,<sup>31</sup> \$3.08 billion of which was associated with FCSAP Class 1 and 2 sites. The majority of this liability is recorded for a group of highly contaminated, complex mining sites managed by AANDC in the north. The progress of the program in addressing liability is discussed in more detail in Section 4.3.

<sup>26</sup> This includes all Class 1 and 2 sites that have completed Step 9 or 10 and/or have a closing flag in the FCSI.

<sup>27</sup> There is a discrepancy of 145 sites between the total number of all FCSAP sites closed and the number of Class 1 and 2 sites closed following completion of R/RM. This is primarily due to two factors: 1. A portion of the sites were remediated early in the program where the assignment of Class changed following remediation, i.e., the site was initially identified as a Class 1 in the FCSI, but reassigned a Class N following remediation. This practice has been abandoned. 2. The percentage of sites closed following completion of R/RM does not necessarily signify that these sites closed with FCSAP remediation funding. The site may have received FCSAP funding at the assessment stage (thus rendering it an FCSAP site), but then the R/RM was completed with custodian funds if it was not a designated Class 1 or 2 or otherwise not selected for funding.

<sup>28</sup> About half of the unclassified FCSAP sites are DFO sites with aquatic components (for example, harbours) for which there is currently a lack of guidance for characterizing and managing contamination. A third of sites that are unclassified are AANDC sites located on reserves.

<sup>29</sup> Please see footnote 5 for a description of the 10-Step Process.

<sup>30</sup> Office of the Auditor General of Canada. 2012. *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*, Chapter 3: Federal Contaminated Sites and their Impacts.

<sup>31</sup> *Public Accounts of Canada, 2012, Volume 1 Summary Report and Consolidated Financial Statements*. <http://publications.gc.ca/site/eng/416661/publication.html>

**A gap would exist in addressing priority and high-liability sites without FCSAP funding.**

- The FCSAP program is addressing a large portion of higher-priority sites (70 percent of Class 1 sites listed in the FCSI) and higher-liability sites (83 percent of sites with a liability of \$1 million or more listed in the FCSI).
- FCSAP expenditures represented approximately 90 percent of all federal expenditures on federal contaminated sites between 2005-06 and 2011-12, with the remaining expenditures leveraged from custodian departments for FCSAP sites, or custodian expenditures on non-FCSAP sites.
- Key informants across all respondent groups confirm the continued need for the program, with custodians confirming that FCSAP has provided a primary source of funding to initiate work on assessment and R/RM of contaminated sites and/or to accelerate ongoing work on contaminated sites. The opportunity to leverage FCSAP funds has increased the priority of this work within custodian departments.
- While FCSAP has provided funds to address a significant portion of higher-priority sites, significant federal contaminated site liabilities exist outside the scope of the program (\$1.7 billion at the end of 2011-12). This includes liabilities anticipated to remain beyond the program sunset date of 2020, and sites that are not eligible under FCSAP.

**A need for the program will continue to exist beyond Phase II for some custodians/sites, although the focus of the program is expected to evolve during this period.**

- Administrative data and key informant opinion suggest that the number of departments involved in the FCSAP program will shrink to include mostly the larger players in Phase III. The maturity of the program and changes to the program funding (i.e., cap on assessment funding) will also drive a focus in future years on R/RM and long-term monitoring, particularly for higher-liability and more complex sites. A continuation of the shift in the focus of the Secretariat and ESDs from assessment of sites to remediation of sites is also expected to respond to the needs of custodians related to R/RM.

**4.1.2 Alignment with Federal Priorities and Departmental Strategic Outcomes**

Evaluation Issue: Relevance	Methods	Rating
2. Is FCSAP aligned with federal government and departmental priorities?	Document review	Acceptable

**The FCSAP program is aligned with federal priorities:**

- Within the Whole of Government Framework,<sup>32</sup> FCSAP falls within the Clean and Healthy Environment outcome area, within the Economic Affairs spending area.

<sup>32</sup> The purpose of this framework is to map the financial and non-financial contributions of federal organizations receiving appropriations by aligning their program activities to a set of high-level outcome

- Funds to clean up federal contaminated sites support the Government's environmental agenda and implementation of Canada's commitments to the World Summit on Sustainable Development (Budget 2003),<sup>33</sup> and contribute to promoting a cleaner environment, community rejuvenation and economic development (Budget 2004).<sup>34</sup>
- The stimulus phase of the CEAP in 2009 allocated additional funding to FCSAP to accelerate work to assess and remediate federal contaminated sites, in order to improve the environment, encourage growth and restore confidence in the economy.<sup>35</sup> More recently, in Budget 2011, the federal government identified the priority of Supporting Families and Communities – Protecting Canada's Natural Environment, within which the government committed to continued action toward systematically assessing, remediating and monitoring federal contaminated sites (FCSAP Phase II).
- FCSAP also complements other priority areas of the federal government, including employment and training (especially in Aboriginal and northern communities). Tools and guidance to integrate sustainability in contaminated sites management support the objectives of the Federal Sustainable Development Strategy. As a majority of FCSAP expenditures are in the north, the program also supports the Government's Northern Strategy.<sup>36</sup>

**The FCSAP program is aligned with the responsibilities of custodians for management of real property, including contaminated sites, and with the mandate and expertise of ESDs.**

- FCSAP is aligned with custodians' responsibility for the management of their contaminated sites. Policy direction for the management of federal contaminated sites is guided by the TB Policy on Management of Real Property, in effect since November 2006.<sup>37</sup> The policy applies to all federal departments who are accountable for the stewardship of their assets.<sup>38</sup> Under this policy, departments are required to: assess, classify and apply risk management principles to determine the appropriate and cost-effective course of action on known and suspected contaminated sites; prioritize sites posing the highest human health and ecological risks; undertake site management activities (including remediation) to the extent required for current or intended federal use; and recover the cost of managing contamination caused by others, when economically feasible.
- Under the FCSAP program, ESDs address priorities specific to their departmental mandate and area of expertise by providing science-based advice on issues of

---

areas defined for the government as a whole. For more information, please visit: <http://www.tbs-sct.gc.ca/ppg-cpr/frame-cadre-eng.aspx>.

<sup>33</sup> Budget 2003. Chapter 5.10: The Environment.

<sup>34</sup> Budget 2004. Chapter 4.4: The Importance of Communities; Speech from the Throne, 2005.

<sup>35</sup> Budget 2012. Annex 2: The Stimulus Phase of Canada's Economic Action Plan: A Final Report to Canadians.

<sup>36</sup> EC. *Federal Contaminated Sites Action Plan (FCSAP) Phase II Performance Measurement Strategy*, January 2012.

<sup>37</sup> FCSAP Policy Framework, <http://www.federalcontaminatedsites.gc.ca/fcsap-pascf/policy-politique-eng.aspx>. Accessed November 2012.

<sup>38</sup> TB Policy on Management of Real Property, <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12042&section=text>. Accessed November 2012.



ecological risk, including to fish and fish habitat and human health risk (EC, DFO, HC) or technical (PWGSC) support to other government departments.<sup>39</sup>

- The program is aligned with the EC (a lead department for FCSAP, and home of the FCSAP Secretariat) strategic outcome *Threats to Canadians and their environment from pollution are minimized*, and the Substances and Waste Management program, Contaminated Sites sub-program.

### **4.1.3 Consistency with Federal Roles and Responsibilities**

Evaluation Issue: Relevance	Methods	Rating
3. Is FCSAP consistent with federal roles and responsibilities?	Document review, administrative data review, key informant interviews	Acceptable

**FCSAP is consistent with federal roles and responsibilities for the management of federal real property, including contaminated sites, and with key federal legislation pertaining to environmental considerations in the management of real property.**

- The majority (two thirds) of FCSAP sites are located on federal real property. One quarter of sites are located on designated Canada Lands such as reserves. Less than 10 percent of sites are located on non-federal lands where there is federal responsibility for contamination due to federal activities or those of a lessee, policy decision or contractual obligation.
- As noted above, TB policies and related directives provide guidance on sustainable and financially responsible management of federal real property. Legislation pertaining to environmental considerations includes the *Canadian Environmental Protection Act, Fisheries Act, Canadian Environmental Assessment Act, Species at Risk Act, Migratory Birds Convention Act, and Arctic Waters Pollution Prevention Act*.
- All interviewees concur that FCSAP is aligned with federal and departmental jurisdiction, mandates, and roles and responsibilities. Almost all agree that the roles of the three components (Secretariat, custodians, expert support) are appropriate. Some key informants note that FCSAP demonstrates that the federal government is “leading by example” in taking action to reduce risks to human health and the environment from contaminated sites.

<sup>39</sup> EC, *Federal Contaminated Sites Action Plan (FCSAP) Phase II Performance Measurement Strategy*, January 2012.

## 4.2 Program Performance

### 4.2.1 Program Effectiveness

Evaluation Issue: Effectiveness	Methods	Rating
4. To what extent have intended outcomes been achieved as a result of FCSAP?	Document review, administrative data review, key informant interviews, case studies, expert panel	<p><b><u>Immediate Outcomes</u></b>  <b>Reduction of uncertainty:</b> Acceptable  <b>Risk reduction plans:</b> Acceptable</p> <p><b><u>Intermediate Outcomes</u></b>  <b>Risk reduction activities:</b> Opportunity for Improvement  <b>Reduced Liability:</b> Opportunity for Improvement</p> <p><b><u>Ultimate Outcomes:</u></b>  <b>Reduced risk:</b> Opportunity for Improvement  <b>Total reduced liability:</b> Opportunity for Improvement</p>

The program is on track to achieve its intended immediate outcome (development of risk reduction plans<sup>40</sup>), though somewhat less progress is evident on completing R/RM activities and closing these sites. While liability is being reduced at FCSAP sites and a significant and increasing proportion of FCSAP funds are allocated to R/RM, the total liability has increased due to the addition of new FCSAP sites, and newly recorded or upward adjustment of existing remediation liability estimates.

*i) Immediate Intended Outcome 1: Reduction of uncertainty associated with the risk from federal contaminated sites; and Immediate Intended Outcome 2: Risk reduction plans developed and implemented at higher-risk federal contaminated sites.*

Progress on the reduction of uncertainty associated with the risk from federal contaminated sites, and on the development and implementation of risk reduction plans for priority federal contaminated sites, is on track: custodians are directing FCSAP funds to site assessment and development of site R/RM strategies to gain a clearer picture of the risks and liabilities of federal contaminated sites.

- FCSAP funds are used by custodians to assess and classify their contaminated sites, and to develop a risk reduction plan where R/RM is required (Step 7 of the 10-Step Process).
- The following indicators and targets were identified for this immediate outcome:

<sup>40</sup> Risk reduction plans refer to plans outlining the R/RM or risk management activities to be undertaken to address a contaminated site.

- number of sites where FCSAP-funded assessments are being conducted (target: 1650 sites in the first three years of FCSAP Phase II and 2300 sites by the end of Phase II); and
- number of Class 1 and 2 FCSAP-funded sites where any risk reduction activities are being conducted (target: 1100 sites in the first three years of FCSAP Phase II and 1500 sites by the end of Phase II).
- In 2011-12, the first year of Phase II, 842 sites had assessment expenditures, or 51 percent of the performance target set for the program (1650 sites) by 2013-14. Also during this year, 408 Class 1 and 2 FCSAP sites had remediation expenditures, or 31 percent of the performance target of 1100 sites by 2013-14.
- Table 4 presents the Highest Step Completed (HSC) of active Class 1 and 2 FCSAP sites (sites that have not been closed). At the end of 2011-12, there were 1556 active Class 1 and 2 FCSAP sites. One third of these sites (35 percent) had reached Step 4 by that time, i.e., had been classified; one third were doing additional testing and classification updates (Steps 5 and 6); and one third had developed or implemented a risk reduction plan (completed Step 7 or higher).

**Table 4: Highest Step Completed for FCSAP Class 1 and Class 2 Active (not Closed) Sites, March 2012**

Steps completed	Total FCSAP Class 1 and Class 2 Active (not Closed) Sites	Percentage of Class 1 and Class 2 Active (not Closed) Sites
<b>Total Active (not Closed) Sites</b>	<b>1556</b>	<b>100</b>
Step 4—Based on the conclusions of the initial assessments, classify the sites as high, medium, or low priority for action.	551	35
Step 5—Conduct detailed testing program.	151	10
Step 6—Update site classification.	344	22
Step 7—Develop a remediation and/or risk management strategy.	306	20
Step 8—Implement the remediation and/or risk management strategy.	204	13

Source: Federal Contaminated Sites Inventory

***ii) Intermediate Intended Outcome 1: Completion of risk reduction activities for higher-risk federal sites.***

**Progress toward the completion of risk reduction activities (Step 8) for priority federal sites is occurring, though progress during the first year of Phase II is falling short of the performance target.**

- The following indicators and targets were identified for this intermediate outcome:
  - Number of Class 1 and 2 FCSAP-funded sites where risk reduction activities have been completed (target: 368 sites by March 31, 2016)

- Percentage<sup>41</sup> of Class 1 and 2 FCSAP-funded sites where risk reduction activities have been completed compared to all Class 1 and ongoing Class 2 sites that require remediation / risk management (target: 59% by March 31, 2016)
- Since 2005, 879 Class 1 or 2 FCSAP sites have completed R/RM activities (completed Step 8 or higher) (37 percent of all FCSAP Class 1 and 2 sites), with Class 1 sites receiving a higher priority in completing R/RM.

**Table 5: Completion of Risk Reduction Activities (Completed Step 8 or Higher) FCSAP Class 1 and 2 Sites, March 2012**

	Total FCSAP Class 1 and Class 2 Sites	Number of FCSAP Class 1 and Class 2 Sites with Completed Risk Reduction Activities	Percentage of FCSAP Class 1 and Class 2 Sites with Completed Risk Reduction Activities
<b>Total FCSAP Class 1 and Class 2 Sites</b>			
<b>Class 1 and Class 2</b>	<b>2379</b>	879	<b>37</b>
Class 1	1013	554	55
Class 2	1366	325	24

Source: Federal Contaminated Sites Inventory

- In 2011-12, 41 Class 1 and 2 FCSAP sites progressed from an HSC of less than Step 8 to Step 8 or higher using FCSAP remediation expenditures. This represents 11 percent of the performance target of 368 sites by 2015-16, and approximately 6.6 percent of all sites on the FCSAP priority list (619 sites).
- Custodian key informants note many examples of sites where risk reduction activities have been completed, but acknowledge that difficulties associated with the features of some contaminated sites (e.g., remoteness; northern sites with shorter work seasons and high site-management costs due to expenses for mobilization of equipment) or program factors (e.g., exclusion of new Class 2 sites from R/RM funding) have delayed the completion of activities in some cases.

***iii) Intermediate Intended Outcome 2: Reduction in liability through implementation of risk reduction plans for higher-risk federal sites; and Ultimate Intended Outcome 2: Reduced total liability at higher-risk federal contaminated sites (total change in total liability for Class 1 and 2 sites)***

**A high percentage of FCSAP remediation expenditures have reduced liability. During the period under study, remediation liability was reduced at Class 1 and Class 2 FCSAP sites through a combination of remediation expenditures and downward adjustments to liability estimates at some sites. However, the liability**

<sup>41</sup> The numerator is the number indicator of the first target above, and the denominator (n=619) is all sites on the FCSAP priority list as of 2010-2011 with HSC < 8 plus any other sites that are identified as Class 1 in Phase II and that reach HSC ≥ 8 with FCSAP expenditures (excluding closed sites that did not reach HCS=8). The denominator includes 546 sites on the FCSAP priority list with HSC < 8 plus an additional 73 Class 1 sites that may eventually be listed on the FCSAP priority list.

**reduction has been more than offset at the program level by an increase in the number of FCSAP sites, and new or upward adjustments to liability estimates for some existing sites, thus resulting in a total increase in overall liability.**

- The following indicator and target was identified for the intermediate outcome:
  - Change in total liability for the 73 highest-priority FCSAP sites (target: \$576 million by March 31, 2016)
- The following indicator and target was identified for the ultimate outcome:
  - Percentage of FCSAP remediation expenditures that reduce liability over the five years of FCSAP Phase II (target: 95 percent by March 31, 2016)
- Annual liability data for 2011-12 reveal that, for the 73 highest-priority sites, there was an increase of \$126 million between opening and closing liabilities reported. Although 50 sites reduced their liability by \$76 million, 23 of the sites increased their liability by \$202 million (including an increase of \$91 million total for Faro and Giant mines alone).
- Overall, the remediation liability for FCSAP Class 1 and 2 sites (Table 6) was reduced by: \$1.28 billion over the seven years of the program (2005-06 to 2011-12) through FCSAP expenditures reducing liability, as well as cost-shared contributions from participating departments; and \$720 million through downward adjustments to liability estimates (e.g., based on revised estimates due to risk assessment, or availability of new, more cost-effective approaches to address contamination).
- The percentage of remediation expenditures (FCSAP and custodian cost-shared) that reduce liability (TERL)<sup>42</sup> in 2011-12 was approximately 92.8 percent<sup>43</sup> (very close to the performance target of 95 percent).

**Table 6: Reduction in Remediation Liability at FCSAP Class 1 and Class 2 Sites, March 2012**

	<b>2005-06 to 2011-12</b>
<b>Total Reduction in Remediation Liability of FCSAP Class 1 and Class 2 Sites</b>	<b>\$2.0B</b>
Expenditures reducing liability	\$1.28B
Downward adjustment to liability estimate	\$720M

Source: Federal Contaminated Sites Inventory

- The total liability reduction is offset, however, by: 1) an increase in the number and associated liabilities of FCSAP-eligible contaminated sites; 2) a determination of liability for currently eligible but not yet funded FCSAP sites that were previously undetermined; and 3) an upward adjustment in existing liability estimates year to year due to an inflation-factor adjustment or an increase in the estimated remediation costs.
- Figure 2 presents the closing liability for all federal contaminated sites. The liability recorded for FCSAP-funded sites (and in parallel for all federal contaminated sites)<sup>44</sup>

<sup>42</sup> The part of the total expenditure that directly reduces the federal liability for the contaminated site during the fiscal year reported.

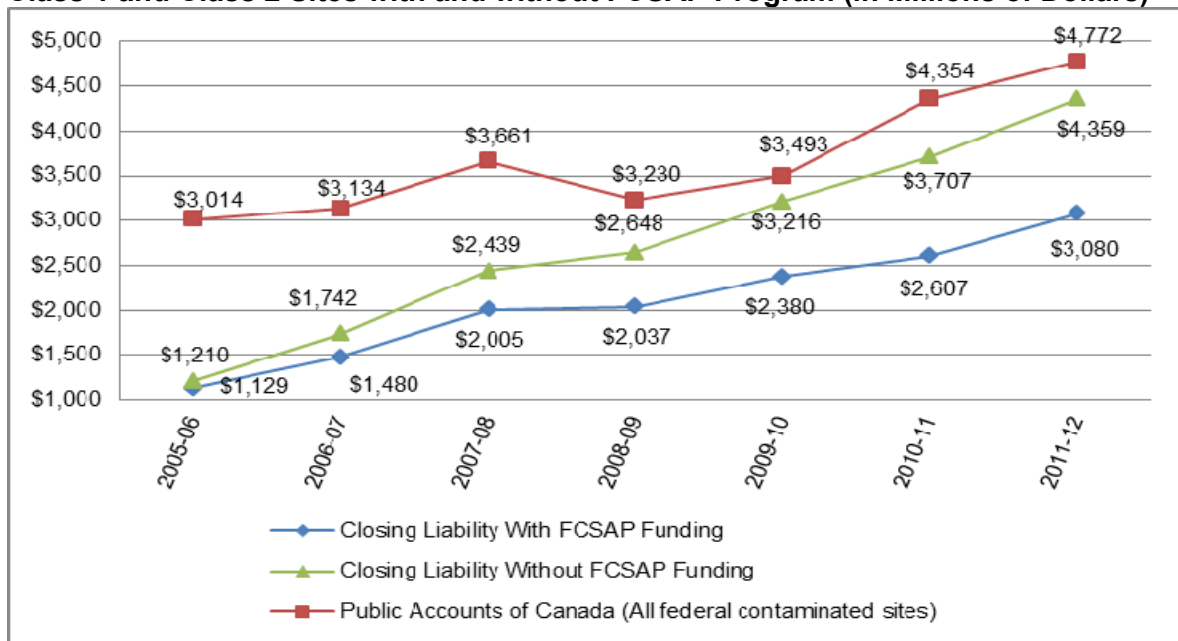
<sup>43</sup> The TERL for Class 1 and 2 sites funded under FCSAP during Phase II was \$193.6 million, while the total expenditures for Class 1 and 2 sites funded under FCSAP during Phase II was \$208.7 million.

<sup>44</sup> In addition to the FCSAP program, three other major initiatives address contaminated sites for which the federal government has accepted some or all financial responsibility: the Port Hope Area Initiative and the

with a recorded liability included in the Public Accounts) has thus increased in successive years from approximately \$1.13 billion in 2005-06 to \$3.08 billion in 2011-12. Importantly, the number of FCSAP sites with a recorded liability increased from 221 in 2005-06 to 1071 in 2011-12 (an increase of almost 400 percent). Even in the most recent year of the period under study (2011-12), the number of FCSAP-funded sites with a recorded liability and the total liability for the program increased from the previous year (from 975 to 1071). As more suspected contaminated sites have been assessed and been determined to be FCSAP eligible, sites funded by FCSAP have accounted for an increasing proportion of the environmental liabilities associated with federal contaminated sites, from 37 percent in 2005-06 to 65 percent in 2010-11.

- Figure 2 also provides a visual representation of closing liability for FCSAP-eligible sites “with FCSAP funding” and “without FCSAP funding” (i.e., if FCSAP funding were not available). The purpose of the representation is to portray the impact of the FCSAP program on reducing liability related to FCSAP-eligible sites. The actual closing liability in 2011-12 was \$3.08 billion. If FCSAP funds were not available, the closing liability would have been approximately \$4.36 billion (it is important to note that the difference between these two figures is \$1.28 billion, which is the amount of expenditure that has reduced actual liability over the past seven years).<sup>45</sup>

**Figure 2: Closing Liability for All Federal Contaminated Sites, as well as FCSAP Class 1 and Class 2 Sites with and without FCSAP Program (in Millions of Dollars)**



Source: Federal Contaminated Sites Inventory

Nuclear Legacy Liabilities Program funded through Natural Resources Canada, as well as the Shared-Responsibility Contaminated Sites Policy Framework (which include such sites as the Sydney Tar Ponds).  
<sup>45</sup> This representation is purely speculative, as many sites represent a significant source of risk to human health and the environment, and, in the absence of a centralized program to address these risks, may well have pursued other sources of funding. Similarly, had FCSAP assessment funding not been available, it is unlikely that departments would have had the internal resources required to assess and therefore identify and record the liabilities associated with many of these sites. The figure is intended to provide a visual representation of FCSAP’s contribution to addressing federal contaminated sites.

- Liabilities associated with FCSAP-funded sites are significantly affected by outlier sites within the FCSAP portfolio. The liability associated with the two largest and most complex FCSAP sites, the Giant and Faro mine sites in the north, represented 45 percent of the total remediation liability associated with FCSAP sites in 2011-12. Progress at these sites (upward and downward movements in liability) significantly affects the liability for the program overall. If these sites are removed from the calculation the total liability for priority sites in the last year of the period under study (2011-12) is reduced (though not eliminated).
- The program has not yet recorded an annual total liability reduction, and the total liability reduction in future years of FCSAP is difficult to predict. Liability reduction may be expected to improve in Phase II because remediation expenditures are increasing (as a proportion of overall FCSAP expenditures), and the proportion of remediation expenditures that are liability-reducing has been significantly higher in the first year of Phase II (approximately 92.8 percent) than the average since the program's inception in 2005-06 (approximately 86.7 percent). On the other hand, the liability estimates themselves are subject to fluctuations (less than one in five closed FCSAP sites had actual remediation expenditures that were within 15 percent of their first opening liability).<sup>46</sup>

***iv) Ultimate Intended Outcome 1: Reduced risk to the environment and human health from federal contaminated sites (completion of R/RM at Class 1 and 2 sites)***

**Reduction in risk to the environment and human health from contaminated sites is being achieved through site closure when R/RM is completed or site closure when there is certainty that no further action is required.**

- The following indicator and target was identified for the intermediate outcome:
  - Percent of all Class 1 and 2 sites where FCSAP-funded risk reduction plans have been implemented (target: 27 percent<sup>47</sup> by March 31, 2016)
- Of the 9410 FCSAP sites, 4178 (44 percent) have been closed.<sup>48</sup>
- Considering Class 1 and 2 sites only, a total of 823 sites (35 percent) have been closed since FCSAP was initiated in 2005-06, with Class 1 sites receiving priority attention. The majority of these sites (82 percent) were closed following completion of remediation activities (at Step 8 or higher).<sup>49</sup>
- Key informants agree that reduction of risks to human health and the environment are being achieved with the reduction of uncertainty through assessment of sites, which provides an understanding of the extent of risk, and through closure of contaminated sites (through R/RM) that are assessed as posing a health or ecological risk. Some interviewees note that the newly-developed FCSAP risk reduction indicator and site closure tools will help custodians demonstrate that risk

---

<sup>46</sup> The first opening liability would be the initial liability that was recorded in the Public Accounts of Canada for a particular contaminated site.

<sup>47</sup> This increases to 50% when pre-Phase II progress outside of FCSAP is included in the numerator.

<sup>48</sup> Among closed FCSAP sites, the majority of these (63 percent) were closed at the early stages of assessment (Steps 1-3) and 80 percent were closed without R/RM being completed. Historical reviews and initial testing led to closure of these sites because the sites were assessed as not being contaminated, or did not pose an unacceptable risk to the environment or human health and, therefore, no further action was required (or, more rarely, because responsibility for the management of the contaminated site no longer resided with the Government of Canada).

<sup>49</sup> Please refer to Table 3.

reduction has occurred. These tools will also assist custodians to determine the need for long-term monitoring of sites.

#### 4.2.2 Program Efficiency and Economy

Evaluation Issue: Efficiency and Economy	Methods	Rating
5. Is FCSAP undertaking specific activities and delivering products at the lowest possible cost? <ul style="list-style-type: none"> <li>› Are program resources reasonable in light of intended outcomes?</li> <li>› How could the efficiency of the program’s activities be improved? Are there alternative, more economical ways of delivering program outputs?</li> </ul>	Document review, administrative data review, key informant interviews, case studies	Opportunity for Improvement

**Based on a number of indicators, efficiency and financial management of the FCSAP program are improving over time. At the midway mark in the program, given current forecasts, it is unlikely that all risks and financial liabilities associated with FCSAP-eligible sites will be addressed within the current program parameters. A number of factors at the program and site levels contribute to and detract from efficiency, leading to a number of suggestions to improve program efficiency, particularly in the implementation of site R/RM. There were no alternative (more economical) models to FCSAP that were proposed.**

##### *i) Program efficiency*

**Program efficiency is perceived to have improved over time, with a number of factors such as central coordination and shared tools and resources contributing to efficiency. Factors that detract from efficiency at the program level are often outside the control of the program (e.g., laborious/restrictive processes to manage program funds; economic factors). Factors that detract from efficiency at the site level suggest opportunities for improvement (e.g., greater consideration of non-conventional remedial options).**

- According to key informants, factors that support program efficiency include the following:
  - development and sharing of expert support tools, which reduces duplication and promotes a nationally consistent approach in contaminated site assessment and management;
  - central coordination of the program across federal custodians, especially when this leads to opportunities for partnering / geographic bundling of assessment and R/RM resources and contracts;
  - multi-year funding of the program; and
  - as of 2010, efforts to streamline reporting requirements.



- The case studies yielded several examples of partnering that is occurring in site management. For instance, AANDC and DND have established an interdepartmental approach to scheduling the long-term monitoring of DEW line sites. At the AANDC Tundra Mine site, sharing of resources has occurred with a local resource company to combine and reduce equipment transportation and other costs.
- Also contributing to efficiency is that FCSAP allows custodians to reallocate FCSAP funds in-year among eligible projects to respond to their own emerging priorities.<sup>50</sup> Departments are required to contribute a cost-share percentage to the total project cost.
- With respect to the contracting process, PWGSC contracting support (e.g., use of PWGSC supply arrangements or standing offers for site assessment) and project management services were praised by a few custodians as contributing to program efficiency.
- Other aspects of the program that support efficiency that were noted by one or two respondents include: the PWGSC call-up list and familiarity with local suppliers that leads to efficient contracting; cost-sharing of remediation/RM expenses with departments; and use of web-based tools for training.
- Some hindrances to efficiency were identified by key informants at the program level. However, these factors often relate to Government of Canada processes that are outside the control of the program (e.g., laborious/restrictive processes to manage program funds, reporting burden).
- Economic factors were noted by several custodian interviewees as an external factor affecting FCSAP's performance: competition for specialized environmental consultants who are often in high demand can affect the cost and timely completion of projects; the rising commodity/resource prices have impacted northern sites in particular; and greater mining activity in the north (e.g., for diamonds) has led to increased competition for consultants/suppliers and higher prices.
- Prioritization tools that were used during the early years of the program incorporated more extensive health and ecological risk scoring, but were reportedly time-consuming and, therefore, streamlined during the CEAP years. However, according to a few key informants, the streamlined scoring process may be impacting the ability of the program to accurately identify higher-risk sites (e.g., in heavily populated or ecologically sensitive areas) across departments.
- Aspects of project/site management were perceived to detract from efficiency, such as when an R/RM option is selected that results in "over-remediation" of the site (e.g., sites are remediated to a standard not required based on the characteristics of the site and the intended use of the site). There is a perception of some inconsistencies across departments in how remedial options are selected, and of reticence among some departments to use innovative approaches or unconventional technologies, including risk management of sites to achieve R/RM objectives more efficiently.
- Procurement processes (a Government-wide issue) were identified as needing improvement by key informants and by experts consulted by the FCSAP Secretariat (through the FCSAP Experts workshop in 2010) and in this evaluation. Custodians have provided a number of suggestions related to procurement tools (e.g., multi-year

---

<sup>50</sup> EC, *FCSAP Annual Report 2008-2009*, 1.2 Program Administration:  
[http://www.federalcontaminatedsites.gc.ca/publications/ar2008-ra2009/ar4-eng.aspx#s1\\_1](http://www.federalcontaminatedsites.gc.ca/publications/ar2008-ra2009/ar4-eng.aspx#s1_1). Accessed November 2012.

contracting, performance-based contracting) through various forums, which have been taken into consideration by PWGSC where its mandate has allowed. External stakeholders (industry representatives) also believe that improvements could be made to contracting processes, citing, for example, the use of multi-year contracting / flexible contracting to allow continuity in site work that occurs over several seasons or to accommodate changes in the scope of work (and to avoid inefficiencies in contract wind up / wind down); the use of pre-qualification lists; and avoiding the use of multiple contractors for various assessment/remediation components, which leads to increased costs and inefficiencies.

- PWGSC has identified and established new tools in procurement (many of which were developed after the FCSAP Experts workshop in 2010), including the following:
  - Various national, regional and department-specific Supply Arrangements (SAs) and Standing Offer Agreements (SOAs) related not only to areas such as hazardous substance analysis, removal, cleanup and disposal, oil spill response (including cleanup, removal and disposal) and general environmental studies, but also to specific contaminated sites activities (e.g., assessments, cleanup). This was corroborated by the Victoria Harbour case study, which identified five different standing offers related to risk assessment, remediation consultation, laboratory services and biological services for contaminated sites in the Pacific Region. A majority of these Supply Arrangements and Standing Offer Agreements are multi-year instruments.
  - In addition to SAs/SOAs, PWGSC provides procurement services using Task Authorizations.<sup>51</sup> An example in the Pacific Region is Northern (North of 60) Task Authorization Contracts, which provide multi-disciplinary environmental consulting services related to contaminated sites in areas such as planning, assessment, remediation and monitoring.
  - Service Level Agreements can be reached between PWGSC and individual custodians. The agreements identify PWGSC as the contracting and project management service provider, and outline the working arrangement between the two parties for the duration of the agreement. Although the program is confirmed each fiscal year and each project is subject to a separate Specific Service Agreement, the end result is that funding is effectively established for a dedicated team of environmental project managers and a dedicated procurement team for the duration of the agreement.
  - Due to specific client requirements, PWGSC has established a dedicated procurement team in the Pacific Region.

---

<sup>51</sup> A contract with Task Authorizations is a method of supply for services under which all of the work or a portion of the work will be performed on an "as and when requested basis," through predetermined conditions such as an administrative process involving task authorizations. These contracts are used in service contracting situations when there is a defined need by a client to rapidly have access to one or more categories of service(s) that are expected to be needed on a repetitive basis during the period of the contract. The work to be carried out can be defined but the exact nature and time frames of the required services, activities and deliverables will only be known when the service(s) will be required during the period of the contract. For more information, please visit <https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/section/3/35/1#section-3.35.1.1>.

- PWGSC incorporates procurement specialists into program groups, which allows procurement to understand the urgency of needs, and creates a procurement process that is more responsive to direct feedback.
  - PWGSC explores opportunities for a more performance-based approach to procurement.
- Members of the expert panel cited the potential for inefficiencies to occur when sites lag in advancing through assessment to the R/RM phase. As noted, the timelines for these processes can increase when delays in beginning R/RM then require site assessment information to be updated. A few key informants likewise identified the need to ensure workplans are scheduled and managed so as to avoid stale dating<sup>52</sup> of site assessments (after five to seven years). Ensuring sufficient funds for R/RM of assessed sites has become more challenging for custodians given the current restrictive funding environment (including both the narrowing of eligibility criteria for FCSAP funding and budgetary constraints faced by custodians) and competing internal priorities.
- A few key informants and expert panellists attributed these inefficiencies to a lack of adequate experience in or oversight of the process on the part of some federal project managers, and the risk-averse tendency of program personnel to use conventional approaches that involve excavation and disposal or pump and treat methods (“dig and dump”) to achieve more rapid site closure and elimination of liability (discussed in more detail in Section 4.2).
- Difficulties securing competitively priced services from suppliers due to high demand or inadequate supply was identified in the key informant interviews and site case studies as another challenge to efficiency. Difficulties in securing consultants, for example, can lead to delays in project timelines. This was particularly true during the CEAP years, when additional funding increased the demand for services from suppliers.
- The TB policy suite respecting real property management was also perceived to be complex and evolving by some thematic case study respondents, making it difficult for project managers at headquarters and in the regions to remain familiar with all relevant aspects of the policies and stay current as policy instruments evolve. Concerns were also raised in this case study about the more limited guidance available to federal custodians in the 2006 policy (compared to the 2002 predecessor policy), creating a need for greater interpretation of the policy by custodians and potentially leading to inconsistencies across federal departments.

## ***ii) Administrative efficiency***

**The administrative costs of the program are just under 10 percent of total FCSAP funds. During the period under study, efficiency has been improving as measured by the amount of program funds required to reduce the remediation liability of sites.**

- Administration of the FCSAP program includes costs for the FCSAP Secretariat, expert support, and custodian program management. Administration as a proportion of total program funding is just under 10 percent, somewhat higher than other federal

---

<sup>52</sup> As a general rule, the site classification scores should be based on data from site assessment reports less than five years old, unless a rationale is provided that explains why older data are still relevant. Professional judgement will always be required to make appropriate decisions on the reliability of site data.

programs, though there are few programs comparable to FCSAP in size or complexity. As well, it should be noted that the administrative costs of the program include the development of tools and guidance by the Secretariat and ESDs, which contribute to program efficiency and are an important legacy of the program. While absolute administration costs will decline over Phase II and III of the program, administration costs as a proportion of total program funding will remain stable.

- A ratio of total program expenditures to total federal remediation liability reduced was calculated (presented in Table 7). During the period under study, the program spent, on average, \$1.2 to reduce \$1 of liability. Note, however, that there were data quality issues with respect to the remediation liability figures during the early years of Phase 1 of the program (2005-06 to 2007-08), which may impact this global estimate. The ratio has improved over time as the program is moving out of program design and definition tasks, and is more focused on site R/RM. In 2011-12, the program spent \$1.1 to reduce \$1 of liability. During the two years that the program received CEAP funding (2009-10 and 2010-11), there was a higher cost-to-liability reduction ratio, due to these funds being used to accelerate assessment of FCSAP sites.

**Table 7: Cost/Benefit Ratio: FCSAP Costs and Liability Reduction**

Fiscal Year	N (Total FCSAP-funded sites reporting TERL)*	Total Expenditures Reducing Liability (Millions)*+	Total FCSAP Costs (Millions)**	Ratio (FCSAP costs: Liability reduction)
2005-06	212	\$81	\$144	1.8:1
2006-07	293	\$181	\$170	0.9:1
2007-08	618	\$172	\$172	1.0:1
2008-09	413	\$178	\$196	1.1:1
2009-10	398	\$225	\$297	1.3:1
2010-11	444	\$264	\$368	1.4:1
2011-12	269	\$179	\$197	1.1:1
Total		\$1,280	\$1,544	1.2:1

\* Source: Federal Contaminated Sites Inventory

+ Includes FCSAP and cost-shared expenditures reducing liability for sites reporting TERL

\*\* Source: FCSAP Secretariat

### **iii) Program expenditure profile**

#### **Management of FCSAP funds at the program level is improving.**

- Between 2007-08 and 2010-11, there was a 14 percent variance between the allocated FCSAP program budget and program expenditures. A portion of these funds was re-profiled, transferred or used for other priorities, and 5 percent of program funds were lapsed. In response, the Secretariat began preparing a mid-year expenditure profile to encourage custodians to take action to avoid such variances, and take advantage of opportunities for intra-departmental (e.g., across regions) and inter-departmental transfers of funds.
- In key informant interviews and thematic case studies, however, custodians note that federal processes to reprofile or transfer funds are time-consuming, and some custodians note challenges in their inability to “fence” or protect FCSAP funds for

contaminated sites projects within their department. These difficulties, however, are outside the control of the program.

- Early difficulties in program financial management, namely, burdensome annual preparation of funding requests to TB (Secretariat) and late receipt of funds (custodians), have eased due to multi-year funding introduced in Phase II.

#### ***iv) Adequacy of resources***

**FCSAP program resources will likely not be sufficient to address financial liabilities of FCSAP-eligible sites from now through 2020. Custodians' ability to address new Class 2 sites has been limited by the change in the funding eligibility criteria under Phase 2 of the program and by resource constraints within custodian departments.**

- As of March 31, 2012, FCSAP remediation funding covered the majority of liability from Class 1 and ongoing Class 2 FCSAP sites. However, the upward trajectory in total liability estimates and the addition of new liabilities from Class 1 sites may demand further prioritization of the existing remediation funding envelope to the highest-risk sites, creating a funding gap for those FCSAP sites potentially excluded from funding.
- Custodians are concerned about the adequacy of FCSAP funding and departmental human and financial resources to manage remaining priority FCSAP sites in their portfolio. Financial capacity was identified by custodians as a challenge to: (i) cost-share FCSAP funding; (ii) address the costs of remediation that fall outside the FCSAP eligibility criteria (e.g., "soft" costs of remediation such as consultations, training to support local employment, experimental work to advance remediation technologies, and some long-term monitoring costs); and (iii) conduct remaining assessments and remediation of new Class 2 or lower-priority sites, which fall outside the scope of the funding eligibility criteria under Phase 2 of the FCSAP program.
- The inclusion of "mega-sites" in the program (a small number of complex former mining sites located in the north) was questioned by a few interviewees, given the significant and long-term financial requirements for these sites, which draw a significant portion of the resources within the FCSAP envelope.

#### ***v) Alternative / more economical approaches***

**No alternative, more economical approaches to the FCSAP delivery model were identified.**

- Key informants generally view the FCSAP model as a sensible approach for addressing federal contaminated sites, and this view was shared by the expert panel. No apparent (more economical) alternative models to FCSAP were proposed that would be consistent with TB policies respecting real property management while maintaining the benefits gained from the horizontal initiative and the support of the Secretariat/ESDs.
- Although some best practices / lessons learned (e.g. pertaining to procurement) may be drawn from contaminated sites management programs in other jurisdictions, the document review and comparative program analysis suggests that the FCSAP program is unique in terms of its design and the number of contaminated sites that are the responsibility of the Crown.

### 4.2.3 Performance and Financial Data

Evaluation Issue: Efficiency and Economy	Methods	Rating
6. Are performance and financial data being collected and reported?	Document review, key informant interviews, case studies	Opportunity for Improvement

**Performance and financial data are being collected and reported for the FCSAP program. Relevant information is increasingly available and being used for decision making. Some of the excessive reporting burden early in the program has been addressed, and performance measures have been enhanced.**

- The FCSAP program reports an array of performance (progress through the 10-Step Process) and financial information (expenditures, liability) captured in the FCSI and FCSAP workbooks. A program annual report is produced (using a recently initiated streamlined reporting process), as are periodic progress updates to FCSAP committees and responses to other corporate or external requests. Larger custodians (e.g., AANDC) also have their own performance reporting/evaluation efforts.
- Program performance reporting has been enhanced by a Performance Measurement Strategy (approved in January 2012), which includes performance targets for the first three years of Phase II and the full five years of Phase II. Service Standards have also been developed to provide guidance, training and expert advice. Contaminated Sites Management Plans, a tool for custodians to set targets and report against them, have been replaced by a streamlined process for collecting planning data using three reporting templates (FCSAP Planning Data, Planning Narrative and Priority Sites).
- Performance and financial data are integrated into decision making, such as in requests for program funding and approval, departmental FCSAP financial planning and management, and reports to senior management.

**Some challenges (e.g., reporting burden, communication of program results, comparability of remediation liability) remain in capturing and reporting program outcomes.**

- Custodians identified a high level of duplication and reporting burden early in the program (e.g., the use of two overlapping data systems; different cut-off dates applied to various reporting systems; numerous ad hoc requests from the Secretariat, corporate sector, media and general public). Duplication in reporting is being addressed to some degree, as the FCSI is now the key repository for financial data and many program performance measures, although the FCSI does not meet all program management needs, because some information, such as program planning data, is not captured. The development of an IM-IT Strategy by the FCSAP Secretariat is intended to continue improving the efficiency and quality of data collection, information management and reporting.
- Some custodians held the view that reporting could be further streamlined. As well, there were suggestions that communications about the program to the public and policy-makers could be strengthened to better highlight program successes and increase the transparency and responsiveness of the program to inquiries about its

operations (a recommendation that was also made in the CESD 2012 audit of federal contaminated sites).

- A challenge in performance reporting over the program period has been the lack of comparability of remediation liability data year to year. This is due to clarifications to the guidance provided to custodians on accounting for environmental liabilities related to contaminated sites. As well, reporting timelines have been a challenge: for example, the production of program annual reports (published only to 2008-09) has been hindered by competing priorities within the Secretariat. However, progress is being made in this area, as the combined 2009-10 / 2010-11 report is nearly approved and a draft of the 2011-12 report was to be published in June 2013.

**There are challenges in estimating the remediation liability associated with contaminated sites, and limitations associated with total liability reduction as a measure of performance at the program level.**

- According to key informant and thematic case study respondents, estimating the costs of site remediation (and therefore remediation liability) is inherently difficult, for a variety of reasons: initial under-estimates of the nature or extent of contamination, as revealed through assessment or the start of the remediation work itself; fluctuating costs of consultants; delays in receiving FCSAP funds or contracting; and evolution of remediation technologies, which may drive costs up or down.
- The program eligibility criterion concerning R/RM funding, i.e., that a liability must be recorded in the fiscal year that R/RM funds are accessed, creates an imperative for custodians to provide an estimate of liability early in the R/RM process when limited information may be available to do so. The program eligibility criteria have been adjusted somewhat to allow custodians to finish Step 7<sup>53</sup> before booking a liability. The FCSI data indicate that only one-in-three Class 1 or 2 sites that have completed Step 7 have liability estimates that are characterized as “substantive,” i.e., of high quality and reliability.
- Despite guidance documents issued on reporting of liabilities, some custodians indicated a lack of clarity/consistency in the guidance, leading to challenges in the calculation and recording of the estimates. Examples of areas of uncertainty include: lack of clear understanding of how to reduce liability through risk management of sites; lack of clarity on when or how to record liability for specific site management strategies (RM, long-term monitoring) or types of sites (aquatic sites); uncertainty in distinguishing between closing liability and contingent liability; and lack of guidance on how to reconcile disparate estimates of the costs of remediation from consultants. These relate to both project management and accounting issues.
  - The Office of the Comptroller General’s (OCG’s) Government Accounting Policy and Reporting office, responsible for providing accounting advice and interpretation on reporting liabilities in the Public Accounts of Canada, issued a revised guidance document in 2010 on reporting remediation liabilities in the Public Accounts of Canada. On an annual basis, it provides departmental financial staff with year-end reporting on remediation liabilities. In addition, it has given accounting presentations at the Real Property Institute of Canada (RPIC) Federal Contaminated Sites Workshop and to custodian departments at their request. In February 2012, the OCG presented on and prepared a

---

<sup>53</sup> See footnote 5 for a description of the 10-Step Process.

- series of questions and answers related to the issue of environmental liabilities (including remediation liabilities).
- On an annual basis, the Office of the Auditor General audits the amounts reported as remediation liabilities by custodian departments, agencies and consolidated Crown corporations, based on reports provided from the FCSI and OCG. Each year, specific sites are selected and a specialist is hired to review, in detail, the liability amount reported. The findings are reported to the specific department and the OCG. Importantly, each custodian's Chief Financial Officer is responsible for ensuring that financial statements are prepared in accordance with the form and content prescribed in Treasury Board Accounting Standard (TBAS) 1.2 and TBAS 1.3 (for quarterly statements) and associated government accounting policies, including the amount reported as a remediation liability
  - There is a perception among some key informants that the program's intended outcome to reduce remediation liability tends to overshadow other program impacts, i.e. the use of remediation liability as a performance measure creates challenges in demonstrating program achievements. Custodians' assessment of their suspected contaminated sites leads to an understanding of the need for and costs of remediation of these sites which, in turn, *increases* the known liabilities for which the government is responsible, at least in the short term.
  - According to some key informants, the reduction of remediation liability is also an important consideration in custodians' decisions on the selection of a site management strategy (i.e., remediation versus risk management). For example, methods of remediation that can be completed quickly (e.g., excavation and removal) without a requirement for ongoing monitoring may be preferred in order to eliminate liability and any longer-term financial commitments for the custodian. Conversely, there is greater uncertainty and mixed views among key informants and experts on the extent to which risk management achieves a return on investment for the Government in terms of liability reduction. Conventional approaches are also often favoured by communities, who have more confidence in the results of remediation compared to risk management solutions that may leave contamination *in situ*. Remediation may also be required if the property is to be divested.
  - A few respondents indicated a need for performance measures of a more qualitative nature, to be used in conjunction with remediation liability. This point was also raised by members of the expert panel, who agreed that FCSAP's dual outcomes of risk reduction and remediation liability are distinct and the notions should be kept separate (i.e., risk can be reduced with limited influence on liability, such as when access to the site is restricted but the site itself remains contaminated, while liability can be reduced on sites that do not generate much risk to human or ecological health). Although the FCSAP Performance Measurement Strategy includes a balance of risk reduction and liability measures, another potential measure of program performance, noted by a few key informants and experts and used in some programs in other jurisdictions, is evidence of the FCSAP program's impact on use/re-use of sites (e.g., brownfield re-development).



4.2.4 Secondary Impacts

Evaluation Issue: Effectiveness	Methods	Rating
7. To what extent have there been other secondary impacts of the FCSAP program?	Document review, key informant interviews, case studies	Opportunity for Improvement

**There is some evidence to indicate that secondary impacts of the program in the area of employment and training are being achieved.**

- Employment and training benefits of contaminated site assessment and remediation are important priorities, with the recent announcement of Phase II of the program emphasizing program links to jobs and economic growth.<sup>54</sup>
- Several custodians (DND, AANDC, Parks Canada Agency) have implemented procurement tools (e.g., an Aboriginal Opportunities and Considerations Clause) and other agreements (e.g., a cooperative agreement with the Inuvialuit and Inuit people) that outline requirements for the use of local and Aboriginal consultants and suppliers for FCSAP-funded work.
- The FCSAP Secretariat has estimated job creation, to date, through modelling techniques<sup>55</sup>: during the program’s first five years (Phase I), an estimated 12 776 jobs<sup>56</sup> were created as a result of FCSAP, the equivalent of over 2000 full-time jobs every year.<sup>57</sup>
- AANDC’s Northern Contaminated Sites Program (NCSP) estimated that, in 2010-11, over 90 percent of all workforce training hours provided by the department were delivered to northerners, including 32 percent of training provided to Aboriginal people. Similarly, the NCSP estimated that, in this same year, 1544 individuals were employed for the program, 51 percent of whom were Northerners and 34 percent of whom were northern Aboriginal people. With respect to contracting, 75 percent of contracts were awarded to northern suppliers and 58 percent to Aboriginal suppliers.
- The FCSAP Secretariat is undertaking a study intended to validate job creation estimates. Human Resources and Skills Development Canada and labour market organizations such as ECO Canada have also supported the effort through various research, awareness, and best practice initiatives.
- The extent to which jobs created under FCSAP represent a *total* increase in employment or lead to long-term jobs was questioned by a few key informants, given that some job creation is short term and localized to the community.

<sup>54</sup> <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=DC9C7CF3-CBA1-40FA-BF69-3D6B3B272BD1>. Accessed November 2012.

<sup>55</sup> No formal targets were identified related to job creation for the FCSAP program. Communications material announcing Phase II of the FCSAP Program states that the program is expected to create the equivalent of approximately 7300 new jobs over the five-year period (about 1500 full-time jobs per year) in the waste management and remediation industry.

<sup>56</sup> Person-years of full time equivalent employment. This is based on Statistics Canada’s Input-Output Model for spending in the Waste Management and Remediation Services sector (North American Industry Classification System [NAICS] 562).

<sup>57</sup> EC, Federal Contaminated Sites Action Plan, (FCSAP) *Phase II, Performance Measurement Strategy*, January 13, 2012.

**Evidence of program impacts on the novel application of remediation technologies or use of unconventional approaches is mixed.**

- Data collected by the Secretariat during the early years of the program indicate an encouraging use of a wide array of contaminated site technologies: during the first three years of the program, 53 percent of FCSAP R/RM projects used conventional technology, 30 percent used innovative technology, and 18 percent implemented a combined approach.<sup>58</sup>
- PWGSC has carried out work to showcase innovative remediation technologies, and has encouraged knowledge transfer through the Demonstration Sites and Innovative Remediation Workshops.
- Key informants were less favourable in their views of unconventional approaches, suggesting that “tried and true” or conventional “dig and dump” approaches have tended to predominate in the program. There was a desire among some key informants for more innovative approaches to dealing with contaminated sites, including the use of conventional remediation technologies in a more sustainable way, or novel sustainable or green technologies. These would build on current efforts, such as the program’s Sustainable Decision Support Tool that helps to evaluate sustainability of treatment technologies, and the work of other organizations such as the Sustainable Remediation Forum on less energy-intensive remediation actions).

**4.2.5 Capacity Development**

<b>Evaluation Issue: Effectiveness</b>	<b>Methods</b>	<b>Rating</b>
8. To what extent has FCSAP had an impact on increasing the capacity of individual custodian departments to remediate or risk-manage contaminated sites? To what extent has the horizontal nature of the FCSAP contributed to its success?	Document review, administrative data review, key informant interviews, case studies	Acceptable

**Custodian capacity for contaminated site assessment and R/RM has been increased by FCSAP funding, and the tools and resources developed by the ESDs. There were some suggestions provided to increase access to ES tools and resources, and to clarify the use of guidelines pertaining to prioritization and risk assessment. The horizontal governance and management of the program are generally seen to be strong.**

***i) Custodian Capacity***

**Overall, FCSAP has been delivered as designed and intended, with FCSAP funds and ES-developed tools and resources supporting custodians’ efforts to assess**

<sup>58</sup> EC, FCSAP Annual Reports, 2005-06 to 2008-09.

**and undertake R/RM of contaminated sites. However, the ability to address new Class 2 sites may be limited for some custodians.**

- Previous reviews of the FCSAP program indicate that outputs are generally being produced as planned,<sup>59</sup> and that Government funds have allowed custodians to move forward in the assessment and R/RM of contaminated sites.<sup>60</sup>
- According to key informants from many departments, and as confirmed in the 2002 CESD report, little work on contaminated sites was underway by custodians prior to the FCSAP program, which provided custodians with the opportunity to leverage funding to initiate work on management of contaminated sites and/or accelerate ongoing work on contaminated sites.
- As already noted,<sup>61</sup> many custodians are troubled by changes to the eligibility criteria in Phase II, which restrict access to FCSAP R/RM funds for new Class 2 sites and place a cap on funding for assessment. Together with departmental budget restraints, some custodian representatives reported that these issues pose a significant challenge for their department.
- ESDs have developed a series of science-based tools and guidance to support custodians with risk assessment / site prioritization and site closure, among other tasks. As noted above, PWGSC has developed resources to assist with the identification and use of innovative solutions and approaches. A pilot was launched with the Canada School of Public Service in 2011-12 to provide online training to custodians on a variety of FCSAP tools and subjects.
- According to custodian key informants, most make use of ES tools and guidance for assessment / site prioritization, and for funding and recording of FCSAP activity. Custodians hold positive views of the tools and resources, which were noted by some interviewees to have a high level of objectivity and to be based on the latest science and best practices. A few custodians, from larger departments in particular, have some internal tools/resources to meet their needs.
- Site case studies, such as Victoria Harbour, reported engaging ESDs over the full course of the project life-cycle to date (e.g., to review risk assessment reports, and provide advice on remediation action plans), and these interactions were reported to be beneficial and constructive.

**Some suggestions were proposed to enhance or clarify guidance tools and resources (e.g., clarifying the use and application of tools, creating a centralized repository, identifying gaps in the availability of tools and resources).**

- A few custodians noted some deficiencies in access to the FCSAP tools and resources (through a centralized repository), which is currently being addressed by the Secretariat with the introduction of a new decision-making framework manual and information management strategy that allows the tools to be accessed in a more efficient manner by linking them to the 10-Step Process. A number of other gaps were identified in the tools and resources available, including the need for additional guidance for estimating and recording remediation liability, aquatic sites

---

<sup>59</sup> EC (Goss Gilroy Inc.), *Formative Evaluation of the Federal Contaminated Sites Action Plan, Final Evaluation Report*, February 2009.

<sup>60</sup> Office of the Auditor General of Canada, *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons, Chapter 3: Federal Contaminated Sites and Their Impacts*, Spring 2012. [http://www.oag-bvg.gc.ca/internet/English/parl\\_cesd\\_201205\\_03\\_e\\_36775.html](http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201205_03_e_36775.html). Accessed November 2012.

<sup>61</sup> Please see Section 4.2.3.

management, and long-term monitoring. The FCSAP Secretariat has convened working groups to address a number of these needs.

- A few ES interviewees note a need to clarify the use and application of the tools and guidance pertaining to screening of contaminated sites for R/RM. According to these respondents, because the NCSCS and the guidelines for human health and ecological risk assessment are highly conservative and are generic for all types of contaminated sites, they are properly used as tools to screen and identify contaminated sites for further assessment. A misuse of the tools occurs when they are applied rigorously as a standard to determine whether a site requires remediation or when the guideline reference values are used as targets for remediation.
- A potential policy impediment in the screening of contaminated sites and setting of R/RM objectives that was raised in the thematic case studies is the TB definition of a contaminated site, which has created some confusion about whether sites with contamination above the guideline (but which do not pose an unacceptable human health or ecological risk) can be closed. No possible solutions were provided to address the issue.

**ii) Governance and Management**

**Governance and management of the program are appropriate, and roles and responsibilities are clear, although some minor issues were identified related to knowledge transfer and communications.**

- FCSAP governance structures were generally perceived by internal key informants to provide strategic decision-making (ADM and DG committees) and appropriate management support (CSMWG). Roles and responsibilities of various players are clear and well understood, with increased clarity being achieved over time (e.g., the role of ESDs). FCSAP Secretariat administrative oversight is sufficient and appropriate, facilitated by the engagement of TBS.
- Some minor issues were reported by internal key informants with respect to the consistency and effectiveness of communications between ESD and custodian headquarters and regions for some departments (e.g., interpreting guidelines). A small number of internal key informants indicated that turnover and recent staffing reductions within the Secretariat have created some challenges in continuity and knowledge transfer.

**4.2.6 External Factors**

<b>Evaluation Issue: Effectiveness</b>	<b>Methods</b>	<b>Rating</b>
9. What external factors have contributed to, or detracted from, FCSAP's performance?	Document review, key informant interviews, case studies, expert panel	N/A

**CEAP funding had an important positive effect in accelerating assessment and remediation activities, but negatively impacted work planning and placed an extra reporting burden on custodians. In some instances, lack of continuity of funding and human resources, and procurement challenges, have also impacted work planning and project costs.**

- According to key informants, an external factor that contributed to FCSAP’s performance was the additional CEAP funds that accelerated work on contaminated sites.
- Factors that reportedly detracted from FCSAP’s performance include: the rapid influx of CEAP funds that created challenges in work planning and placed an additional reporting burden on custodians;<sup>62</sup> and late receipt of FCSAP funds by custodians (including the gap in funding when the program transitioned from Phase I to Phase II), which led to uncertainty in work planning and delays in completing work, particularly for sites in locations with a short field season.
- Procurement challenges, often associated with broader market conditions (e.g., competition for consultants due to demand from the commodity/resource sector or from FCSAP during the CEAP years) and the remote location of sites were noted by some key informants and in the site case studies as negatively influencing the pace and cost of the projects.

**4.2.7 Unintended Outcomes**

<b>Evaluation Issue: Effectiveness</b>	<b>Methods</b>	<b>Rating</b>
10. Have there been any unintended (positive or negative) outcomes?	Document review, key informant interviews, case studies	N/A

**Few key informants noted unintended outcomes of the program.**

- Few unintended outcomes of the program were noted by key informants or evident in other lines of evidence.
- According to a small number of key informants, a potential negative unintended outcome of the ineligibility of new Class 2 contaminated sites for Phase II R/RM funding (those sites that did not have remediation expenditures prior to April 1, 2011) is creation of uncertainty within affected communities regarding action on contaminated sites, particularly if the costs of R/RM for these sites cannot be assumed by the custodian.

**4.2.8 Best Practices / Lessons Learned**

<b>Evaluation Issue: Effectiveness</b>	<b>Methods</b>	<b>Rating</b>
11. What are the best practices and lessons learned as a result of FCSAP?	Document review, comparative program analysis, key informant interviews, case studies, expert panel	N/A

**Several strengths of the FCSAP program were identified, including the horizontal nature of the program leading to strengthened program delivery and success, as**

<sup>62</sup> Please see Section 4.2.3 for further details.

**well as the program's science-based approach leading to notable advancements in available tools and resources.**

A number of strengths and best practices of the FCSAP program were identified, including the following:

- **Horizontality.** There was a consensus among key informants that the horizontal nature of the FCSAP program, including coordination facilitated by the Secretariat, shared tools, management mechanisms and best practices, is beneficial and has strengthened the program's delivery and success. Benefits include: reduced duplication; positive synergies and efficiencies from combined efforts/perspectives; development of a community of practice in contaminated sites management; ability to transfer funds across departments; and consistency in use of metrics/reporting. The CSMWG is noteworthy as an active, collaborative and effective forum. Working groups established to address emerging issues and information sharing on contaminated sites through the RPIC workshops were also praised by key informants.
- **Science-based approach.** According to key informants, the work of the ESDs has led to some notable advancements in objective, science-based tools and resources relating to assessment and management of contaminated sites that have, in turn, increased custodian capacity to do this work effectively and efficiently (e.g., FCSAP Aquatic Sites Classification System, the Secretariat's Priority Assessment tool, human health and ecological risk assessment tools).
- **Focus on priority sites.** Several key informants identify the program's focus on priority sites as a strength, in that finite resources are directed to higher-risk sites. The NCSCS (or similar classification system) is used in a like manner in other jurisdictions. However, there were some mixed views about this practice in the key informant interviews.

**Lessons have been learned and shared on the management of contaminated sites, related to, for example, achieving complete and accurate performance and financial reporting, as well as new approaches and techniques. Other jurisdictions are focusing their efforts on developing best practices in areas such as procurement and human resources.**

- Although some believed that sharing of lessons learned could always be improved, best practices and lessons learned in contaminated sites management have been consolidated and communicated through a variety of initiatives, such as the following:
  - Research on best practices in achieving consistent, complete and accurate performance and financial reporting by custodians.<sup>63</sup> The thematic case study on remediation liability suggested a number of other best practices used by larger departments (AANDC, DND and TC) for recording remediation liability, including use of external accounting expertise, sharing liability estimates between the departments for similar sites (e.g., DEW Line sites), and detailed documentation and use of internally developed guidance session/materials. Within the program (PWGSC/DND/TC), best practices for contaminated site liability identification and reporting have been developed, and the adaptation of these best practices to support all FCSAP custodians is under discussion.

---

<sup>63</sup> Interis Consulting Inc. *FCSAP and FCSI Reporting Variances. Final Report*, February 2012.

- RPIC Federal Contaminated Sites National (bi-annual) Workshops, which offer opportunities to learn about the effective management and remediation of federal contaminated sites, as well as new approaches and techniques to address them.<sup>64</sup>
- PWGSC tools on topics such as sediment costing and project management. Post-project audits were noted by a few key informants (also identified as an internal priority by PWGSC) as another way to potentially demonstrate value for money and derive and share lessons learned.
- The comparative program analysis indicates that most jurisdictions studied are examining best practices in procurement tools in an effort to ensure value for money. These jurisdictions reported seeking efficiencies through enhanced procurement tools (e.g., pre-qualification lists, multi-year contracting) to obtain well-qualified consultants, project continuity and timely completion.
  - PWGSC's expert support group has similarly developed SOAs and SAs for FCSAP consultants and suppliers.
- Other practices highlighted by contaminated sites programs in other jurisdictions include: consistent use of a site closure protocol or designation to indicate the circumstances of closure and need for additional monitoring; and attention to recruiting and retention of experienced, capable staff for site management, including local knowledge of site conditions and the supplier community.
- These themes were confirmed in the document review. For instance, the FCSAP Experts Workshop convened in 2010 characterized the human resources situation as "critical" and recommended that the FCSAP program conduct a human resources needs assessment to determine requirements, focusing on evolving needs as the program moves to focus on remediation.

## 5.0 Conclusions

The findings of the evaluation lead to the following broad conclusions about the relevance and performance (effectiveness, efficiency and economy) of the FCSAP program.

### **Relevance**

The evaluation evidence indicates that there is a continued need for the FCSAP program to address significant work remaining to assess and classify suspected federal contaminated sites, and to complete R/RM activities at priority sites in order to reduce risk and liability. FCSAP provides the primary source of funding for addressing federal contaminated sites, and the need for the program is likely to continue to the end of the 15-year program life-cycle. The program is aligned with federal priorities and complements other broader environmental and economic strategies of the federal government. It is consistent with federal roles and responsibilities, and legislative obligations pertaining to environmental stewardship. The program is also consistent with the responsibilities of custodians for management of real property, including contaminated sites, and with the relevant mandate and expertise of each ESD.

---

<sup>64</sup> RPIC *Federal Contaminated Sites National Workshops. 2006, 2008, 2010, 2012.* <http://www.rpic-ibic.ca/en/events/2012fcsnw/index.shtml>. Accessed November 2012.

**Performance – Effectiveness**

The program is on target to achieve immediate outcomes related to the development of risk reduction plans and reduction of uncertainty associated with risk. Questions remain as to whether the program will achieve its intermediate and ultimate outcomes related to completing remediation activities and closing FCSAP-eligible contaminated sites.

Although liability is being reduced at FCSAP-funded sites and a significant and increasing proportion of FCSAP funds are dedicated to R/RM, the total remediation liability for FCSAP sites has increased due to the addition of new FCSAP sites, and newly recorded or upward adjustments of existing remediation liability estimates. A handful of mega-sites within the FCSAP portfolio account for a large portion of the liability, however, and upward adjustments to liability for these sites have a significant impact on program-level progress on total liability reduction.

There is some evidence to indicate that the program's secondary impacts in the areas of employment and training are being achieved. Evidence of the use of innovative approaches to deal with FCSAP-contaminated sites is mixed.

**Performance – Efficiency and Economy**

At the midway mark in the program, given current forecasts, it is unlikely that all risks and financial liabilities associated with FCSAP-eligible sites will be addressed within the current program parameters. The upward trajectory in financial liabilities suggests a potential gap between the demand for R/RM funding and available program funds. At the same time, budgetary restraints within departments are creating challenges for some custodians to leverage FCSAP funds to address contaminated sites that fall outside the FCSAP eligibility criteria or sites that will require funding well beyond the end of FCSAP in 2020 (i.e., for R/RM and long-term monitoring).

Based on a number of indicators, efficiency and financial management of the FCSAP program are improving over time. A number of factors, such as central coordination and shared, science-based tools and resources, contribute to program efficiency. Factors that detract from efficiency at the program level are often outside the control of the program (e.g., laborious/restrictive processes to manage program funds, and economic factors). Factors that detract from efficiency at the site level suggest opportunities for improvement, including more consistent decision making in the selection of remedial options across departments.

Positive feedback was provided with respect to PWGSC contract support and project management services. Improving procurement tools (e.g., multi-year contracting to allow for project continuity, pre-qualification lists that are shared across departments and regions, and performance-based contracting) was identified as a priority to increase the overall efficiency of the contracting process. Evidence, however, points to the existence of these procurement tools and suggests a lack of awareness on the part of custodians.

Several lines of evidence suggest that remediation of contaminated sites has tended to rely on conventional “dig and dump” solutions because of the relative immediacy of their impacts on liability reductions. Key informants indicated a need to support custodians in



more effective decision making about remedial solutions, including the relative impact of risk management and remediation activities on liability.

The FCSAP program delivery model is appropriate to support achievement of intended outcomes and has been delivered as intended. Evidence suggests that FCSAP tools, resources and funds, including enhanced funding from the CEAP, support custodians' efforts to assess and undertake R/RM of contaminated sites, although some suggestions to increase access to and clarity of some of the FCSAP tools and guidance were noted. The horizontal governance and management of the program are generally seen to be strong. The evaluation did not reveal any alternative, more economical models to FCSAP.

Excessive reporting burden early in the program's history is being addressed, and performance measures have been enhanced. Challenges remain, however, to consistently and reliably record remediation liability of contaminated sites and ensure that communications about program performance are balanced between remediation liability reduction and other indicators of performance (e.g., reduction of risk, socio-economic benefits).

## **6.0 Recommendations and Management Response**

**1) EC, FCSAP Secretariat, should initiate an exercise to determine if a re-focusing of the program's resources is required to effectively deploy the remaining FCSAP funds to reduce human health / ecological risks and financial liabilities for the program's duration.**

- There is considerable work remaining for the FCSAP program to complete risk reduction activities and resolve remediation liability for FCSAP Class 1 and ongoing Class 2 sites. As the program moves past the midway mark, it is unlikely that all risks and financial liabilities associated with FCSAP-eligible sites will be addressed within the current program parameters (given the continued upward trajectory in the amount of remediation liability).
- The evaluation evidence points to three potential areas that pressure program resources: a) expenditures directed to the mega-sites in the program, which impose a significant financial weight on the program and will require funding well beyond the end of FCSAP in 2020; b) the reach of the program, which includes 5232 suspected or active sites that may require a more rigorous triage to determine the highest-risk sites across all of government; and c) site assessments, which need to be scrutinized to ensure funding is being applied to the highest-priority suspected sites across government and that the program/departments are in a position to schedule and manage required R/RM work to avoid stale dating of assessments.

**Management Response to Recommendation #1**

<b>Statement of Agreement/Disagreement with the Recommendation</b>
The ADM, Environmental Stewardship Branch, agrees with the recommendation.
<b>Management Action</b>
Each year, an annual report is prepared by the FCSAP Secretariat that outlines program accomplishments, spending, progress and performance against program targets. In addition, since 2005, a total of seven planning exercises for funding approval and two for

policy approval (at the onset of the program and again in 2010-11 in preparation for Phase II of the program) have been undertaken to continue focusing the funds on managing the highest-priority sites under the program.

Another analysis is being undertaken to estimate the funding needs of custodians for FCSAP assessment and remediation activities, compared to the remaining program funds for the balance of Phase II (to 2015-16) and Phase III (2016-17 to 2019-20). If the analysis shows that there is a funding shortfall, the FCSAP Secretariat will revisit the risk-based approach that is currently being used to prioritize sites for funding, to ensure that the program continues to focus the funds on managing the highest-priority federal contaminated sites.

<b>Timeline</b>	<b>Deliverable(s)</b>	<b>Responsible Party</b>
February 2014	- A report on the results of the funding analysis will be prepared; it will determine if the risk-based approach for prioritizing sites needs to be revised.	Director, Compliance Promotion and Contaminated Sites Division, Environmental Stewardship Branch
April 2014	- (If required) A revised risk-based prioritization approach will be developed	

**2) PWGSC, with support from the FCSAP Secretariat, should review opportunities to promote awareness and understanding of available procurement tools and resources among FCSAP custodian departments, agencies and consolidated Crown corporations.**

- Improving procurement tools and resources was commonly cited as a priority in the evaluation by key informants and experts. Information provided by PWGSC indicates that these procurement tools and resources (including national, regional and department-specific Supply Arrangements and Standing Offer Agreements, a majority of which are multi-year instruments) have been in existence since at least 2010 and are available to custodians. This suggests a lack of awareness on the part of custodians.

**Management Response to Recommendation #2**

<b>Statement of Agreement/Disagreement with the Recommendation</b>
The Deputy Minister for PWGSC accepts the recommendation.
<b>Management Action</b>
PWGSC proposes the following actions in response to Recommendation #2: <ol style="list-style-type: none"> <li>The Real Property Contracting Directorate (RPCD) and the Environmental Services Directorate (ESD) will develop and deliver two one-hour WebEx sessions (French and English). These sessions will be stored in a file-sharing system to allow for ad hoc access.</li> <li>RPCD and ESD will develop a fact sheet (English and French). The fact sheet will be shared via a file-sharing system and at events such as the Federal Contaminated Sites National Workshop in April 2014.</li> <li>RPCD and ESD will deliver a professional development session at the 2014 Federal Contaminated Sites National Workshop in Ottawa.</li> </ol>

EC's FCSAP Secretariat agrees to support PWGSC in implementing its action plan in response to Recommendation #2. Specifically, the FCSAP Secretariat will assist PWGSC in its implementation of the management actions, by acting as the intermediary between PWGSC and the custodian departments.

<b>Timeline</b>	<b>Deliverable(s)</b>	<b>Responsible Party</b>
March 2014	- Two one-hour WebEx sessions will be developed and delivered.	RPCD and ESD  RPCD and ESD
April 2014	- A fact sheet will be developed. - The fact sheet will be uploaded to the file-sharing system. - The fact sheet will be distributed at the Federal Contaminated Sites National Workshop in April 2014.	RPCD and ESD
April 2014	- A professional development session will be delivered at the 2014 Federal Contaminated Sites National Workshop.	FCSAP Secretariat
April 2014	- Communications materials will be shared with custodian departments, such as placing notices on IDEA (an electronic bulletin board), adding training events to the coordinated FCSAP training plan, and transmitting messages from the FCSAP Secretariat email account and through working groups.	

**3) EC, FCSAP Secretariat, should review opportunities to support custodians in the decision-making process regarding whether to risk manage or remediate their contaminated sites to achieve FCSAP intended outcomes.**

- Evidence suggests that remediation of contaminated sites has tended to rely on conventional “dig and dump” solutions because of the relative immediacy of their impacts on liability reductions. There are some incentives within the program (e.g., to eliminate liability within the program time-frame) and externally (e.g., public concern) that encourage this. Key informants indicated a need to support custodians in more effective decision making about remedial solutions, including the relative impact of risk management and remediation activities on liability.

**Management Response to Recommendation #3**

<b>Statement of Agreement/Disagreement with the Recommendation</b>
The ADM, Environmental Stewardship Branch, agrees with the recommendation.
<b>Management Action</b>
The FCSAP Secretariat released an online decision-making framework (DMF) in 2013-14 to guidance for federal custodians responsible for managing contaminated sites. The DMF

presents the key decisions that must be made throughout the process of managing a contaminated site, and identifies criteria that can be used for selecting a remediation or risk management approach. Custodians may use the DMF to increase the transparency and consistency of the decision-making process, in order to provide assurance that the chosen remediation approach best suits the specific circumstances at a site, and to achieve the program objectives of reducing human health and ecological risks, and the associated financial liability.

<b>Timeline</b>	<b>Deliverable(s)</b>	<b>Responsible Party</b>
October 2013	- A decision-making framework document is currently available on the Federal Contaminated sites web portal.	Director, Compliance Promotion and Contaminated Sites Division, Environmental Stewardship Branch

- 4) EC, FCSAP Secretariat, in consultation with TBS, should work to provide guidance to custodians so that they can improve the consistency and reliability of their estimates of remediation liability for contaminated sites.**
- The evaluation found that the estimation of remediation liability of contaminated sites has inherent challenges stemming, in part, from difficulties in accurately estimating the costs of remediation during site assessment, even during the early stages of remediation. In addition, there are persistent challenges for the program in implementing an estimation method that is applied consistently by custodians. The evaluation found that custodians would welcome elaboration of existing guidance on remediation liability, such as through additional user-friendly tools/resources or training. A number of specific areas of uncertainty were identified in the evaluation (e.g., need for increased understanding of reducing liability through risk management of sites).

**Management Response to Recommendation #4**

<b>Statement of Agreement/Disagreement with the Recommendation</b>		
The ADM, Environmental Stewardship Branch, agrees with the recommendation.		
<b>Management Action</b>		
The FCSAP Secretariat will consult with the custodial departmental groups involved in contaminated sites management and in accounting for contaminated sites liability estimates, as well as TBS, in order to develop guidance and provide training to assist custodian departments in the reporting of contaminated sites liability estimates. TBS will continue providing guidance to financial advisors of custodian departments (to the extent that is in accordance with its mandate) on the interpretation of accounting standards as they relate to liabilities for contaminated sites.		
<b>Timeline</b>	<b>Deliverable(s)</b>	<b>Responsible Party</b>
March 2014	- A guidance document will be prepared that gathers available best practices for estimating liability for contaminated sites from departments and addresses any remaining issues that could cause inconsistent or unreliable liability estimates.	Director, Compliance Promotion and Contaminated Sites Division, Environmental Stewardship Branch

## **Annex 1**

### **List of Participating Departments**

#### **FCSAP Participating Departments (2005-06 to 2011-12)**

- Aboriginal Affairs and Northern Development Canada
- Agriculture and Agri-Food Canada
- Canada Border Services Agency
- Canadian Food Inspection Agency
- Correctional Service Canada
- Environment Canada
- Fisheries and Oceans Canada
- Health Canada
- Jacques Cartier and Champlain Bridges Incorporated
- National Capital Commission
- Department of National Defence
- Natural Resources Canada
- National Research Council of Canada
- Parks Canada Agency
- Public Works and Government Services Canada
- Royal Canadian Mounted Police
- Transport Canada
- Treasury Board Secretariat

## Annex 2 Summary of Findings<sup>65</sup>

Evaluation Question	Acceptable	Opportunity for Improvement	Attention Required	Not Applicable
<b>Relevance</b>				
1. Is there a continued need for FCSAP?	●			
2. Is the FCSAP aligned to federal government and departmental priorities?	●			
3. Is FCSAP consistent with federal roles and responsibilities?	●			
<b>Performance: Effectiveness</b>				
4. To what extent have intended outcomes been achieved as a result of FCSAP?				
Immediate outcome 1: Reduction of uncertainty	●			
Immediate outcome 2: Risk reduction plans	●			
Intermediate outcome 1: Risk reduction activities		●		
Intermediate outcome 2: Reduced liability		●		
Ultimate outcome 1: Reduced risk		●		
Ultimate outcome 2: Total reduced liability		●		
<b>Performance: Efficiency and Economy</b>				
5. Is FCSAP undertaking activities and delivering products at the lowest possible cost?		●		
6. Are performance and financial data being collected and reported?		●		
7. To what extent have there been other secondary impacts of the FCSAP program?		●		
8. To what extent has FCSAP had an impact on increasing the capacity of individual custodian departments to remediate or risk-manage contaminated sites?	●			

<sup>65</sup> The rating symbols and their significance are outlined in Table 2 on Page 12.

<b>Evaluation Question</b>	<b>Acceptable</b>	<b>Opportunity for Improvement</b>	<b>Attention Required</b>	<b>Not Applicable</b>
9. What external factors have contributed to, or detracted from, FCSAP's performance?				•
10. Have there been any unintended (positive or negative) outcomes?				•
11. What are the best practices and lessons learned as a result of FCSAP?				•

### Annex 3 Evaluation Matrix

Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
<b>Relevance: Does the program remain consistent with and contribute to the federal government priorities and address actual needs?</b>							
EQ1 <i>Is there a continued need for FCSAP?</i>	› Number and percentage of suspected federal contaminated sites that have been identified, but not yet classified (i.e., Step 3 or below)			X			
	› Number and percentage of federal contaminated sites assessed as Classes 1 and 2 requiring remediation or risk management where such activities are not yet completed (i.e., Step 7)			X			
	› Assessed liability (dollar value) of federal contaminated sites			X			
	› Evidence of whether gaps would exist in the remediation and risk management of federal contaminated sites in the absence of FCSAP	X					
	› Evidence of / views on extent of need for FCSAP beyond Phase II	X					
EQ2 <i>Is FCSAP aligned to federal government priorities?</i>	› Evidence of / the degree to which FCSAP's objectives correspond to current federal strategic outcomes and priorities	X	X				
EQ3 <i>Is FCSAP consistent with federal roles and responsibilities?</i>	› Evidence of alignment of FCSAP mandate with federal jurisdiction, roles and responsibilities	X					
	› Evidence of the need for federal government involvement	X					
	› Views on the alignment of FCSAP with federal jurisdiction, mandates, roles and responsibilities		X				



Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
<b>Performance – Economy and Efficiency: Are the most appropriate, efficient and economic means being used to achieve outcomes?</b>							
Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
EQ4 <i>Is FCSAP undertaking activities and delivering products at the lowest possible cost?</i>	› Evidence of / views on appropriateness and efficiency of administrative and operational processes	X	X	X	X		
	› Evidence of / views on appropriateness of communications structure/strategy (e.g., clear/consistent communications among partners and stakeholders)	X	X				
	› Evidence of / views on effectiveness of collaboration among partners and stakeholders	X	X		X		
	› Evidence of / views on use of technologies that may impact efficiency	X	X		X		
	› Evidence of / views on the existence of program design elements typically associated with efficient delivery (e.g., benchmarking, service standards, combining contracts across sites partnering with other levels of government or private sector where possible, best practices)	X	X	X	X	X	
	› Evidence of / views on complementarity/duplication of effort	X					
	› Evidence of / views on reasonableness of program resources / capacity in light of intended outcomes	X	X		X		
	› Evidence of / views on whether the program utilized the least amount of resources needed to produce its outputs	X	X		X		
› How could the efficiency of the program's activities be improved?	› Comparison of departmental FCSAP budget allocations vs. actual expenditures	X		X			
	› Analysis of expenditures as identified in the TB submission vs. actual expenditures	X		X			
	› Views on variations between planned vs. actual expenditures (e.g., rationale)	X		X			
	› Analysis of actual administrative costs (salary and O&M) as a percentage of total program costs	X		X			

Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
	› Analysis of FCSAP operational costs in relation to the production of outputs	X		X			
	› Cost/benefit ratio (ratio of total FCSAP costs to total reduction in liability achieved and estimated, taking into consideration fluctuations due to assessment and outlier sites)	X		X			
	› Analysis of FCSAP activities/components, to identify which are critical, important and non-important <sup>66</sup> to the achievement of the program's overall objectives	X	X	X	X	X	X
› Are there alternative, more economical ways of delivering outputs?	› Evidence of / views on how the efficiency of FCSAP activities could be improved	X	X		X	X	X
	› Evidence of / views on whether there are alternative, more efficient, ways of delivering FCSAP activities and outputs	X	X		X	X	X
	› Comparison of federal contaminated site remediation and risk management / long-term monitoring programs, activities and products delivered by other similar jurisdictions (e.g., provincial jurisdictions, United States, United Kingdom, Australia)					X	
EQ5 <i>Are performance and financial data being collected and reported?</i>	› Evidence that results/outcomes are well-articulated, and a performance measurement strategy/plan has been developed	X		X			
	› Extent to which performance and financial data are reported	X		X	X		
› If so, is this information being used to inform senior management/ decision-makers?	› Evidence of / views on degree to which performance and financial data are reliable, timely and valid	X	X	X			
	› Evidence of / views on extent to which performance and financial data informs/supports decision-making processes	X	X				

<sup>66</sup> **Critical:** These activities are mandated by legislation and other legal obligations (e.g., Memorandum of Understanding). **Important:** There is a strong direct link between these activities and the achievement of program objectives. **Non-Important:** There is a weak link between these activities and the achievement of program objectives.

Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
<b>Performance – Effectiveness: Has the program achieved its intended outcomes?</b>							
Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
EQ6 <i>To what extent have intended outcomes been achieved as a result of FCSAP?</i>	› Evidence of / views on achievement of immediate intended outcome: ☐ Increased development and implementation of risk reduction plans for higher-risk federal sites	X	X	X	X		
	› Evidence of / views on achievement of intermediate intended outcomes: ☐ Completion of risk reduction activities for higher-risk federal sites ☐ Reduction in liability through implementation of risk-reduction plans for higher-risk federal sites	X	X	X	X		
	› Evidence of / views on progress toward achievement of ultimate intended outcomes / FCSAP contribution to: ☐ Reduced risk to the environment and human health from federal contaminated sites (completion of remediation/risk reduction at Class 1 and 2 sites) ☐ Reduced total liability at higher-risk federal contaminated sites (total change in total liability for Class 1 and 2 sites)	X	X	X	X		
	› Assessment of / views on logical link between FCSAP activities, outputs, and intended outcomes	X	X			X	X
	› Evidence of / views on degree to which the FCSAP is delivered as designed and intended	X	X		X		
	› Views on the continuing appropriateness of the FCSAP design for achieving Phase II intended outcomes			X			
EQ7 <i>To what extent have there been other secondary impacts of the FCSAP Program?</i>	› Evidence of / views on other impacts: ☐ Socio-economic impacts ☐ Community impacts ☐ Environmental impacts ☐ Other impacts	X	X		X		

Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
EQ8 <i>To what extent has FCSAP had an impact on increasing the capacity of individual custodian departments to remediate or risk manage contaminated sites?</i>	› Evidence of formal strategic planning process for contaminated sites in custodian departments/agencies	X		X			
	› Evidence of / views on use of specific tools/guidance / technology transfer (suggestions for improvement)	X	X		X		X
	› Views on increased capacity of custodian departments/agencies to: <ul style="list-style-type: none"> <li>☐ Identify suspected contaminated sites</li> <li>☐ Assess contaminated sites</li> <li>☐ Remediate or risk manage Class 1 and 2 contaminated sites</li> </ul>		X		X		X
› To what extent has the horizontal nature of the FCSAP contributed to its success?	› Evidence of / views on the impact that each of the following aspects has had on the FCSAP's level of success: <ul style="list-style-type: none"> <li>☐ Shared governance</li> <li>☐ Shared funding/resources</li> <li>☐ Shared remediation processes/standards</li> <li>☐ Shared tools/resources/guidelines</li> <li>☐ Shared outcomes</li> <li>☐ Shared best practices and lessons learned</li> <li>☐ Inter-relationships between the core components (Secretariat, Expert Support, Custodians)</li> </ul>	X	X		X		
	› Evidence of / views on the appropriateness and efficiency of the FCSAP governance structure (e.g., clearly defined and understood governance structure, processes for prioritization and decision making, adequacy of governance and controls to achieve intended outcomes)	X	X				
	› Evidence of / views on clarity of roles and responsibilities for program delivery (e.g., Custodians, Expert Support, TBS, Secretariat)	X	X				
	› Evidence of / views on the appropriateness and efficiency of FCSAP Secretariat oversight	X	X				

Question	Indicators	Document Review	Key Informant Interviews	Administrative Data Review	Case Studies	Comparative Program Analysis	Expert Panel
EQ9 <i>What factors have contributed to, or detracted from, FCSAP's performance?</i> › To what extent have these factors had more or less of an impact due to the FCSAP being a horizontal initiative?	› Evidence of / views on external factors that have influenced the performance and achievement of FCSAP intended outcomes	X	X		X		X
	› Views on the relationship, if any, between identified factors and the horizontal nature of the FCSAP		X				
EQ10 <i>Have there been any unintended (positive or negative) outcomes?</i> › If so, how were they addressed? › If so, to what extent are these results related to the FCSAP being a horizontal program?	› Evidence of / views on the presence of impacts (positive or negative) beyond the intended FCSAP outcomes	X	X		X		
	› Evidence of / views on actions taken by management, where appropriate, to address unintended impacts	X	X		X		
	› Views on the relationship between identified unintended impacts and the horizontal nature of the FCSAP		X		X		
EQ11 <i>What are the best practices and lessons learned as a result of the FCSAP?</i>	› Evidence of / views on FCSAP strengths and weaknesses	X	X		X	X	X
	› Suggestions for improvements to the FCSAP		X				X
	› Evidence of / views on lessons learned and shared best practices among partners	X	X		X	X	X