

**CEA MERCURY PROGRAM:
SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

SECTION 1: OVERVIEW

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Introduction

Eight coal-fired electricity generating companies have joined forces to develop and implement the CEA Mercury Program aimed at improving the information base around mercury inventories, measurement and control in Canada. This document is developed to provide guidance to the participating CEA member companies on the implementation of the coal and residue sampling component of the Program. Each company will tailor this document to meet individual requirements, in co-operation with their respective Provincial Environment Agencies.

Mercury and electricity

Mercury is a naturally occurring metallic element that is released into the environment through both human and natural activities. Mercury released into water from either the air or soil is a concern as it can be transformed into its most common organic form, methyl mercury. In this form, mercury can bioaccumulate and pose a risk to human health when there is exposure to high enough levels through fish consumption.

Mercury is found in coal to varying degrees. When coal is burned to produce electricity, mercury is released into the environment. As one of the largest sources of Canadian anthropogenic mercury emissions, the companies in Canada's coal-fired electricity generation sector are committed to reducing these releases as part of their emission management strategies. The first priority is to reduce the significant scientific uncertainties around the measurement and control of mercury emissions from coal-fired electricity generation.

Reducing uncertainties – The CEA Mercury Program

Building on significant efforts over the past few years, coal-fired electric generation companies in Canada, in co-operation with governments, are embarking on a three-year program to reduce these uncertainties. The program will:

1. Improve emission inventories and the development of management options through an intensive two-year coal, residue and stack sampling program;
2. Promote effective stack testing through the development of guidance material and the support of on-site training on the Ontario Hydro Method for employees, government representatives and contractors, on an as-needed basis;
3. Strengthen laboratory analytical capabilities through analysis and quality assurance programs;
4. Create and maintain an information-clearing house to ensure that all parties can keep informed on global mercury research and development activities.
5. Conduct mercury research and development.

The findings of this program will provide critical information for establishing and reviewing a mercury standard for Canada, and finding cost-effective and efficient management options for mercury emissions over the long-term.

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Improving the mercury emission inventory through Coal & Residue Sampling & Analysis

The CEA believes one of the first priorities is to improve the inventory of mercury emissions from coal-fired power plants across the country. Companies have already put significant effort into achieving this objective. To augment this ongoing work and to support discussion of effective mercury management and standards achievability, CEA members have committed to a program of mercury measurement and analysis. This document outlines a mutually agreed upon set of guidelines has been developed for an intensive program to

sample and analyse the mercury in coal, residue and flue gas at the generation facilities over a two year timeframe.

Coal, fly ash and bottom ash will be sampled and analysed for key substances, including mercury. The Implementation Plan Template provides guidance on process, sampling and analysis methodologies and reporting requirements.

The program is designed with quality-assurance and information value as the principal drivers. Sample collection, handling, and storage will follow standard procedures, where practicable, as agreed among the companies and the respective provincial governments. Quality-assured analyses will be conducted on mercury and other key substances associated with mercury.

Program Management & Communication of Findings

The coal, residue and stack sampling and analysis program elements are being delivered and reported through agreements between individual companies and their respective Provincial Agencies. Program information will be collected through CEA's data management department and disseminated on the CEA Mercury Program Website. Utilities will report the findings of the coal, residue and stack sampling and analysis to the CEA and provincial governments on a quarterly basis. These findings will be compiled into quarterly reports and two annual reports that will be available to governments and other stakeholders. Other program findings will likewise be made publicly available in a timely manner.