

# **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

## **SECTION 4**

### **REPORTING GUIDELINE**

# **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

## **SECTION 4**

### **REPORTING GUIDELINE TABLE OF CONTENTS**

#### **SECTION 4                    REPORTING GUIDELINE OVERVIEW**

#### **REPORTING TEMPLATES :**

<b>ANNEX A</b>	<b>GENERAL FACILITY INFORMATION REPORT</b>
<b>ANNEX B</b>	<b>STACK TESTING SITE PLAN REPORT</b>
<b>ANNEX C</b>	<b>COAL &amp; ASH SAMPLING SITE PLAN REPORT</b>
<b>ANNEX D</b>	<b>QUARTERLY FACILITY REPORT</b>

# **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

## **SECTION 4 REPORTING GUIDELINE FOR THE CEA MERCURY SAMPLING & ANALYSIS PROGRAM: OVERVIEW**

### **INTRODUCTION**

This Guideline outlines the rules and procedures for reporting data under the CEA Mercury Sampling & Analysis Program (the “Program”). These rules and procedures represent the agreement of the parties on: 1) how data generated by the program will be reported by individual companies to their governing provincial jurisdiction and the CEA; and 2) how the CEA will, in turn, manage and report the data received from individual companies.

#### **4.1 SUBMISSION OF GENERAL FACILITY INFORMATION AND SITE SPECIFIC SAMPLING/TESTING PLANS**

- a) Companies will submit to their respective jurisdiction, no later than \_\_\_\_\_, a completed form of the “General Facility Information” report, attached as Annex A.
- b) Companies will submit to their respective jurisdiction, no later than \_\_\_\_\_ days before proposed on-site stack testing, a site specific test plan in conformance with the form in Annex B.
- c) Companies will submit to their respective jurisdiction, no later than \_\_\_\_\_, a coal and ash sampling plan in conformance with the form in Annex C.

#### **4.2 QUARTERLY REPORTING TO GOVERNING JURISDICTION AND CEA**

##### *a) Form and Delivery of Quarterly Report*

Companies will use the attached form (Annex D – Quarterly Facility Reporting Form) to report mercury stack testing activity and coal and ash sampling and analysis data for each of their facilities on a quarterly basis. Two copies of the report will be submitted to each of a designated representative of the governing jurisdiction and the CEA according to the schedule described in (b).

## **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

### *b) Commencement and Timing of Quarterly Report*

October 1, 2002 marks the start of the first reporting period. A facility's sampling, analysis and reporting schedule, however, may change over the period of the program, in accordance with the Coal and Ash Sampling and Analysis Guideline. As a consequence, a date of commencement for a second phase of 36 weeks of coal and ash sampling and analysis, if deemed necessary, must be selected by the parties to this agreement in order to maintain a nationally consistent reporting schedule.

A report will be submitted quarterly for each plant and will reflect the coal and ash sampling and analysis data collected during the previous quarter. For greater clarity, data collected between October 1, 2002 and December 31, 2002 would be reported no later than the last working day of March, 2003, data collected between January and March, 2003 would be reported no later than the last working day of June, 2003. Any applicable mercury stack testing activity will be noted in the quarterly reports. This quarterly reporting schedule is to be applied until completion of the Program in \_\_\_\_\_, 2004.

### *c) Content of Quarterly Report*

The content of the quarterly report is represented in the sample form attached in Annex D to this guideline. Companies will provide all information on a per unit basis.

#### i) GENERAL PLANT INFORMATION

Plant Name:  
Legal Owner  
Legal Operator:  
Plant Representative:  
Contact Info for Plant Representative  
Primary Fuel (Type, %)  
Secondary Fuel (Type, %)  
Net Generation (GWh)

- Changes to Unit Equipment or Operations during Quarter:
- Changes/Deviations from Coal Sampling and Analysis Program as submitted in \_\_\_\_\_.
- Changes/Deviations from Ash Sampling and Analysis Program as submitted in \_\_\_\_\_
- Summary of Stack Testing Activity
- other information relevant to the data reported

## **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

ii) FOR COAL

Ash - % by weight (dry basis)  
Sulphur - % by weight (dry basis)  
Moisture - % by weight (dry basis)  
Heating Value – mmBtu/ton (and kJ/kg?)  
Mercury – ppm  
Chlorine – ppm

iii) FOR ASH

Unburned Carbon - % by weight (dry basis)  
Moisture - % by weight (dry basis)  
Sulphur - % by weight (dry basis)  
Mercury – ppm (dry basis)  
Chlorine – ppm (dry basis)

The results of a three-week bottom ash sampling program will be reported to the designated jurisdictional representative for each facility no later than \_\_\_\_\_. If bottom ash indicates quantities of mercury are less than five percent of the predicted mass balance of mercury, no further testing or reporting of bottom ash mercury content is required.

*d) Additional Reporting of Mercury Stack Testing Results*

In addition to quarterly reporting of any summary results of mercury stack testing performed, facilities will submit two copies of the mercury stack testing report within \_\_\_\_ days of its finalisation to the designated provincial jurisdictional representative and the CEA.

*e) Reporting Changes to Plant Equipment, Process, Sampling or Analytical Procedures*

In the event that a change or deviation is required from a facility's Mercury Stack Testing and/or Coal and Ash Sampling programs as submitted to the responsible jurisdiction, a facility representative will forthwith notify the designated provincial jurisdictional representative.

*f) Public Access to and Availability of Quarterly Reports*

Program results will be made available to the public through the CEA.

## **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

### *g) Confidentiality*

Should a facility wish to claim certain data or information as confidential, it must notify the designated provincial jurisdictional representative and provide reasonable justification for the claim in accordance with the relevant provisions of their jurisdiction's Access to Information legislation.

### *h) Quarterly Meetings with Jurisdiction*

A representative from each company participating in the Program will meet quarterly with the designated representative of the responsible jurisdiction to review the company's progress and findings with its coal and ash sampling and analysis program.

### *i) Annual National Meetings*

Approximately three months after the conclusion of each reporting year under the Program, a national meeting will be convened to review and assess progress and findings under all aspects of the Program. For additional detail, see Part III.

## **4.3 CEA DATABASE AND PUBLIC REPORTING**

### *a). Role of CEA in Data Management*

The CEA will:

- i) Receive and maintain a copy of the quarterly report of each facility participating in the Program;
- ii) Create a central database for the information and data collected throughout the Program
- iii) Create and maintain a public website for the Program. The website will incorporate the data and results of all data gathering programs, as well as information pertaining to the status of all aspects of the Program including the laboratory round robin, training for stack testing, summary of activity of the information clearing house as well as any additional mercury related activity that participating companies wish to report.
- iv) Respond promptly to any public or stakeholder requests for access to the data submitted by facilities participating in the Program.
- v) Within 30 days of receipt of the quarterly reports from participating facilities, prepare a national compilation of the quarterly reports, available in both paper and electronic form.
- vi) Within 120 days of receipt of the third and sixth quarterly facility reports, respectively, prepare an annual report that compiles and analyses

## **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

the facility data submitted over the course of the year, identifying key trends and observations related to the data gathering program. This annual report to be made available in both paper and electronic form. The annual report will summarise activity related to the laboratory round robin, training for stack testing, developments in ASTM procedures, information clearing house activities, as well as any other utility activity on mercury that companies wish to have reported.

- vii) Host an annual meeting of company representatives, designated jurisdictional representatives and ENGO representatives to the Mercury Canada Wide Standards process to review and assess progress on the Program.
- viii) Monitor and report to participating companies and designated jurisdictional representatives any changes to relevant ASTM procedures.

Ensure open and regular communication, as required, with the appropriate CCME and CEA representatives.

# CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

## SECTION 4 ANNEX A GENERAL FACILITY INFORMATION REPORT

Facility Name: \_\_\_\_\_ Date Prepared: \_\_\_\_\_

*Note: A copy of ANNEX A must be completed for each facility and submitted to the designated provincial jurisdictional representative by\_\_\_\_\_.*

### PART I: GENERAL INFORMATION

Name of Legal Facility Owner	
Address of Legal Facility Owner	
Name of Facility Operator	
Address of Facility Operator	
Facility Code	
Facility Address	
Facility Mailing Address (if different from above)	
Designated Facility Contact Person	
Title and Contact Information for Designated Facility Contact Person	
Facility In-Service Date	
No. of Boilers	
Total Nameplate Capacity	

## CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

### PART II – FUEL INFORMATION

#### a) Fuel Overview

Primary Fuel	lignite    sub bituminous    bituminous    anthracite    oil natural gas    pet coke
Primary Fuel Used (%)	
Major Source of Primary Fuel	
Secondary Fuel	lignite    sub bituminous    bituminous    anthracite    oil natural gas    pet coke
Secondary Fuel Used (%)	
Major Source of Secondary Fuel	
Other Fuels Used (check as applicable, indicate %; include only if >5%)	lignite    sub bituminous    bituminous    anthracite    oil natural gas    pet coke    use: ____ %
Major Source(s) of Other Fuels	
Fly Ash Handling	wet    dry
Fly Ash Disposal	landfill    sale    storage
Bottom Ash Handling	wet    dry
Bottom Ash Disposal	landfill    sale    storage

#### b) General Fuel Characteristics (as received on a weight basis, moisture in):

Boiler ID	HHV (kJ/kg)	Sulphur (%)	Ash (%)	Hg (ppb)	Moisture (%)

# CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

## PART III – POWER GENERATION INFORMATION

### a) General Boiler Information

Boiler ID	Status*	Nameplate Capacity (MCR)	Boiler Manufacturer	In Service Date	Type of Firing**

\* Operating (OP), Out of Service > 365 days (OS), Retired & not expected to be returned to service (RE), Standby or Inactive Reserve (SB), Cold Standby & requires 3-6 months to reactivate (SC), Other (OT)

\*\* Tangential (TF), Spreader Stoker (SS), Fluidized Bed (FB), Front Firing (FF), Cyclone (CY), Concentric (CO), Side Firing (SF), Downshot (DS), Other (OT)

### b) Boiler ID & Capacity (MWe)

Boiler ID	1995	1996	1997	1998	1999	2000	2001	2002

### c) Boiler ID & Net Generation (GWh)

Boiler ID	1995	1996	1997	1998	1999	2000	2001	2002

## CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

### PART IV: POLLUTION CONTROL EQUIPMENT

Boiler ID	NOx Control <sup>1</sup>	SO2 Control <sup>2</sup>	Particulate Control <sup>3</sup>

- 1: low NOx Burners (LNB), selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), fluidised bed combustion (FBC), other (OT)  
 2: wet flue gas desulphurization, (FGD-wet); dry scrubbing (FGD-dry); compliance coal (CC), fluidised bed combustion (FBC), coal gasification (CG), other (OT)  
 3: Fabric filter (FF); cold-side electrostatic precipitator (CS-ESP); hot-side electrostatic precipitator (HS-ESP); cyclone (CYC), other (OT)

### PART V: EMISSIONS SUMMARY FOR 2001

Boiler ID	SOx (tonnes)	NOx (tonnes)	Total PM (tonnes)	Mercury (kg)

# CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

## PART VI: DATA COLLECTION PROGRAMS

a) Coal and Ash Sampling and Analysis Program

As specified in the Reporting Guideline, each facility is asked to complete the form in Annex C, “Coal and Ash Sampling Site Plan” and submit it to the designated provincial jurisdictional representative no later than \_\_\_\_\_. Annex C is supplementary to Annex A and details the sampling and analysis program for the facility.

b) Stack Testing Program

i) As specified in the Reporting Guideline, each facility is asked to complete the form in Annex B, “Stack Testing Site Plan Report” and submit it to the designated provincial jurisdictional representative no later than \_\_\_\_\_ days before each planned testing event. Annex B is supplementary to Annex A and details the stack testing program for the facility.

ii) Please complete the table below for submission with this report (adding rows as needed).

<b>Prior Stack Tests (1996-2001)*</b>			
<b>Boiler ID</b>	<b>Date</b>	<b>Method</b>	<b>Total Hg (g/h)</b>
<b>Preliminary Test Plan</b>			
<b>2002 Testing</b>	<u>Boiler ID:</u>	<u>Proposed Date:</u>	<u>Method:</u>
<b>2003 Testing</b>	<u>Boiler ID:</u>	<u>Proposed Date:</u>	<u>Method:</u>
<b>2004 Testing</b>	<u>Boiler ID:</u>	<u>Proposed Date:</u>	<u>Method:</u>

\*Previous report results to be provided.

# CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

## SECTION 4

### ANNEX B STACK TESTING SITE PLAN REPORT

*NOTE: A COMPLETED COPY OF ANNEX B MUST BE SUBMITTED TO THE DESIGNATED PROVINCIAL JURISDICTIONAL REPRESENTATIVE AT LEAST 60 DAYS PRIOR TO EACH PLANNED STACK TESTING EVENT*

<b>Name of Facility</b>			
<b>Testing Dates (dd/mm/yy)</b>			
<b>Boiler ID for Test Unit</b>			
<b>Test Method</b>	Ontario Hydro Method		US EPA Method 29
<b>Plant Representative</b>	<u>Name:</u>	<u>Tel:</u>	<u>Email:</u>
<b>Stack Testing Contractor</b>	<u>Name:</u>	<u>Tel:</u>	<u>Email:</u>
<b>Designated Provincial Representative</b>	<u>Name:</u>	<u>Tel:</u>	<u>Email:</u>
<b>Audit/Process Monitor</b>	<u>Name:</u>	<u>Tel:</u>	<u>Email:</u>
<b>Laboratory 1</b>	<u>Contact Info:</u>		<u>Analysis to be Performed:</u>
<b>Laboratory 2 (if applicable)</b>	<u>Contact Info:</u>		<u>Analysis to be Performed:</u>
<b>Summary of Deviations from the Stack Sampling Guideline sampling locations</b>			
<b>Summary of Stack Sampling Method Deviations</b>			
<b>Summary of Deviations from the Stack Sampling Method QA/QC requirements</b>			

# CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

## SECTION 4

### ANNEX C COAL & ASH SAMPLING SITE PLAN REPORT

*NOTE: A COMPLETED COPY OF ANNEX C MUST BE SUBMITTED FOR EACH FACILITY TO THE DESIGNATED PROVINCIAL JURISDICTIONAL REPRESENTATIVE BY SEPTEMBER 16, 2002.*

<b>Name of Facility</b>					
<b>Program Start Up (dd/mm/yy)</b>					
<b>Plant Representative</b>	<u>Name:</u>	<u>Tel:</u>	<u>Email:</u>		
<b>Designated Provincial Representative</b>	<u>Name:</u>	<u>Tel:</u>	<u>Email:</u>		
<b>Laboratory 1</b>	<u>Contact Info:</u>		<u>Contact Info:</u>		
<b>Laboratory 2 (if applicable)</b>	<u>Analysis to be Performed:</u>		<u>Analysis to be Performed:</u>		
<b>Coal Sampling Location/Method</b>	<u>Location:</u>		<u>Based on ASTM Method:</u>		
<b>Ash Sampling Location/Method</b>	<u>Location:</u>		<u>Based on ASTM Method:</u>		
<b>Coal Sampling Frequency/Method</b>	daily weekly		manual automatic		
<b>Ash Sampling Frequency</b>	daily weekly				
<b>ASTM methods for coal analysis</b>	<u>HHV:</u>	<u>Ash:</u>	<u>Moisture:</u>	<u>Sulphur:</u>	<u>Chlorine:</u> <u>Mercury:</u>
<b>ASTM methods for ash analysis</b>	<u>U.C.</u>	<u>Moisture :</u>	<u>Sulphur :</u>	<u>Chlorine :</u>	<u>Mercury :</u>
<b>Summary of QA/QC for coal sampling and analysis</b>					
<b>Summary of QA/QC for ash sampling and analysis</b>					

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

**SECTION 4  
ANNEX D QUARTERLY FACILITY REPORT**

**QUARTER:** \_\_\_\_\_

**GENERAL FACILITY DATA**

Name of Facility: \_\_\_\_\_ Legal Owner: \_\_\_\_\_ Legal Operator: \_\_\_\_\_  
 Facility Representative: \_\_\_\_\_  
 Contact Info for Facility Representative (tel; email): \_\_\_\_\_  
 \_\_\_\_\_  
 Is Data Representative of Facility: y/n?  
 If no, specify unit(s) represented by data: \_\_\_\_\_

**QUARTERLY FUEL AND GENERATION SUMMARY**

Primary Fuel: a) type \_\_\_\_\_ b) % of quarterly fuel mix \_\_\_\_\_  
 Secondary Fuel: a) type \_\_\_\_\_ b) % of quarterly fuel mix \_\_\_\_\_  
 Net Generation (GWh): \_\_\_\_\_

**BACKGROUND INFORMATION**

Relevant Changes to Facility Equipment or Operation Changes/Deviations from Coal Sampling & Analysis Plan	
Changes/Deviations from Ash Sampling & Analysis Plan	
Summary of Mercury Stack Testing Activity	
Other Information Relevant to Data Collection Program	

## CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN

### WEEKLY COAL & ASH SAMPLING RESULTS

Specify units represented by data: \_\_\_\_\_  
 (Attach a separate report for each unit tested at a plant)

MEASURED DATA ↓		WEEKS														
		1	2	3	4	5	6	7	8	9	10	11	12	13	Range	Avg
COAL	Ash															
	Sulphur															
	Moisture															
	HHV															
	Hg															
	Cl															
ASH	U. C.															
	Moisture															
	Sulphur															
	Hg															
	Cl															

**NOTES:**

**UNIT**

Fuel Type: Choose from list: BIT, LIG, SUB, WC, SC, RFO, PC, NG, OTH (if combination, indicate ratio of two highest vol. fuel)

**COAL\*\***

Ash: % by weight  
 Sulphur: % by weight  
 Moisture: % by weight  
 HHV: mmBtu/ton  
 Hg: ppm  
 Cl: ppm

**ASH\*\***

U.C. (unburned carbon): % by weight  
 Moisture: % by weight  
 Sulphur: % by weight  
 Hg : ppm  
 Cl: ppm

\*\*all measurements to be reported on a dry basis

**Fuel Types:**

BIT: bituminous/anthracite      LIG: lignite      SUB: subbituminous      WC: waste/other coal      SC: coal-based synfuel  
 RFO: residual fuel oil      PC: petroleum coke      NG: natural gas      DFO: distillate fuel oil      OTH: other