

## Oil Sands Monitoring (OSM)

### 2016-2017 PROJECT PLAN SUMMARY

<b>Project Name:</b>	<b>A1-3-1 Ambient Air Monitoring Network Optimization</b>
<b>Type of Project:</b>	Focused Study
<b>Delivery Agent:</b>	ECCC/AEP
<b>Project Contact:</b>	Long Fu (AEP) Long.Fu@gov.ab.ca Paul Makar (ECCC) paul.makar@canada.ca
<b>Budget:</b>	\$ 123,550

#### **Project Description:**

This project combines the effort of a number of past Oil Sands Monitoring (OSM) focused study projects including the network assessment to determine the marginal gain in monitoring a given pollutant or pollutants at a specific station relative to other stations. To meet the monitoring needs, the number of stations and their locations have to be rationalized by answering specific questions regarding: spatial and temporal variation and trends; air quality episode and exceedance identification and analysis; causal relationships and source attribution; and effectiveness of control measures and management response. This study will utilize statistical analysis of monitoring station data as well as the air mapping tool and GEM-MACH model to assess the contribution of each station to the monitoring of key air parameters in the region. Two independent projects have been proposed to provide the necessary science to support optimization recommendations; they are: (1) Evaluation of Monitoring Networks Using Observation Data, Correlation Analyses, Removal Bias, and Model Simulations (project A1-3-1 AEMERA); and (2) Evaluation of Monitoring Networks Using Observation Data, Dissimilarity Analysis, and Air-Quality Model Output (project A1-3-1 ECCC). The results of these two activities will be used to develop recommendations on the optimization of the ambient air monitoring network in the oil sands region. The final recommendations will be developed in the 2017-18.

#### **Project Objectives:**

- Perform correlation and dissimilarity analysis on observation data;
- Analyze GEM-MACH model output at the same station locations with the dissimilarity approach;
- Analyze Air Mapping Tool simulations at the same station locations with “removal bias” approach.

#### **Key Outcomes:**

Analysis and report discussing the existing monitoring station locations with reference to the maps, correlation analysis; remove bias, and provide recommendations for reducing or increasing station density based on this comparison

#### **Geographic Scope:**

The project covers the oil sands regions.

#### **Associated Data and Reports:**

Compilation of a technical report summarizing the methods and results