

5- YEAR LONG-TERM DATA MANAGEMENT ACTIVITY WORK PLAN

Changes to this Work Plan are only accepted via an Approved Addendum.

General Information	
Monitoring Category: <i>(From OSM long-term plan; choose from drop-down menu)</i>	Standards, QA/QC, Data Mgt.
Strategic Monitoring Objective: <i>(From OSM long-term plan; choose from drop-down menu)</i>	Objective: Establish and Maintain an Integrated Data Management System for Archiving and Retrieval of Oil Sands Monitoring Program data.
Work Plan Unique Identifier:	D-2-1718
Monitoring Activity Title:	AEP Data Management System & Portal
Geographic Location <i>(choose from drop-down menu, if Project Location is in more than one area choose from second drop-down)</i>	Location Not Applicable
Monitoring Site(s) Coordinates <i>(latitude and longitude)</i>	N/A
Monitoring Organization and Responsible Manager:	Alberta Environment and Parks Rita Lazar-Tippe
Date Activity initiated:	2017
Specific Project Objective: <i>(State the activity objective)</i>	<p>To deliver a robust Environmental Monitoring and Science Division (EMSD) / Alberta Environment and Parks (AEP) data management system for EMSD/AEP – Oil Sands Monitoring program (OSM) water data that supports the EMSD/AEP’s legislated mandate of reporting to the public on the condition of the Oil Sands environment in Alberta on the basis of evaluations & assessments of collected data. With the intent to encompass all other Oil Sands science data sets within the system at a later date.</p> <p>EMSD/AEP has been working with internal and external stakeholders to have a clear understanding of the science requirements, which will be utilized for the data management system – water data.</p> <p>EMSD/AEP is currently conducting a pilot to determine feasibility of the short listed data management system (with the focus on the OSM discrete samples of water quality, as outlined by one of the</p>

	<p>program stakeholder). As stated above, the intent for 2017-18 is to ensure all EMSD/AEP OSM water data is centralized and managed within the EMSD/AEP data management system. With the intent that by 2018-19 all medias of the EMSD/AEP OSM data to be managed and make data publically available.</p>		
<p>Deliverables (17/18):</p>	<ol style="list-style-type: none"> 1. Implement an EMSD/AEP data management system that will house EMSD/AEP – OSM water data. With the intent to encompass all other Oil Sands science data sets within the system at a later date. 2. Ability for self-serve data mining, data extract and data download for all EMSD/AEP OSM water data. 3. Make publicly available SOP’s (standard operating procedures), methods and process documentation. 4. Capture descriptive metadata to ensure data can be easily searchable. 5. Streamline and where possible automate basic data validation (set data threshold and notification for outliers). 		
<p><i>Milestone/Deliverable</i></p>	<p><i>Start Date</i></p>	<p><i>Expected Completion Date</i></p>	<p><i>Human Resources (identify who and how many staff are delivering the activity)</i></p>
<p>Deliverables (provide enough information to support status reporting)</p>			
<p>Q1 April – June (Water Quality)</p>			

1.	<p>Requirements to manage OSM Water Quality Data:</p> <ul style="list-style-type: none"> • Metadata descriptive structure (pictures, station names, parameter collected) • QA/QC standards and validation protocols: Current documentation available (ISO standards, instrumentation standards, etc.) • Data Importing capabilities: FTP required, standardization of the data importing process • Vendor (laboratories) engagement in the analysis/validation process: Current processes in place for the different labs, templates used for the processing of the data, standardization of the current processes across all vendors 	June 1, 2017	July 14, 2017	<p>SA – Massie Kitagawa, SME – Anil Gupta / Cynthia Mcclain / Colin Cooke PM – Elis Valera, Oversight – Rita Lazar-Tippe</p>
Q2 – July – September (Water Quality)				
2.	<p>List of roles and their responsibilities in the proper EMSD/AEP OSM water quality data management processes within the system:</p> <ul style="list-style-type: none"> • System administrator • Field technicians requiring access to input the data • Scientists/QA/QC analyst performing the validation and QA/QC applying the QA/QC standards to the information 	July 17, 2017	July 31, 2017	<p>SA – Massie Kitagawa, SME – Anil Gupta / Cynthia Mcclain / Colin Cooke PM – Elis Valera, Oversight – Rita Lazar-Tippe</p>

3.	<p>Water quality Standard Operating Procedures (SOPs) outline the overarching process (who, what and how) on the operation and maintenance of the data management system – water discipline outlining the following:</p> <ul style="list-style-type: none"> • Objective • Definitions • Roles and responsibilities • Process Steps • References 	June 1, 2017	Aug. 16, 2017	<p>SME – Anil Gupta / Cynthia Mcclain / Colin Cooke PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe</p>
4.	<p>Design and implement education/training modules on the new system and SOP that will be implemented to outline the process. Including:</p> <ul style="list-style-type: none"> • Training attendance list training communication schedule • Training modules (SOP on systems operations) • Training completion certificate 	Sept. 6, 2017	Sept. 22, 2017	<p>SME – Anil Gupta / Cynthia Mcclain PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe</p>
5.	<p>The following requirements completed to manage EMSD/AEP OSM water quantity data:</p> <ul style="list-style-type: none"> • Metadata descriptive structure (pictures, station names, parameter collected) • QA/QC standards and validation protocols: Current documentation available (ISO standards, instrumentation standards, etc) • Data importing capabilities: FTP required, standardization of the data importing process • Vendor (laboratories) engagement in the analysis/validation process: Current processes in place for the different labs, templates used for the processing of the data, standardization of the current processes across all vendors 	Sept. 26, 2017	Oct. 6, 2017	<p>SA – Massie Kitagawa, SME – TBD, PM – Elis Valera, Oversight – Rita Lazar-Tippe</p>

Q3 – October – December (Water Quantity)				
6.	<p>Identify roles and responsibilities in the proper ESMD OSM water quantity data management processes within the system:</p> <ul style="list-style-type: none"> • System Administrator • Field Technicians requiring access to input the data • Scientists/QA/QC Analyst performing the validation and QA/QC applying the QA/QC standards to the information 	Oct. 9, 2017	Oct. 13, 2017	SA – Massie Kitagawa, SME – TBD, PM – Elis Valera, Oversight – Rita Lazar-Tippe
7.	<p>Water quantity Standard Operating Procedures (SOPs) outlining the overarching process (who, what and how) on the operation and maintenance of the data management system outlining the following:</p> <ul style="list-style-type: none"> • Objective • Definitions • Roles and responsibilities • Process Steps • References 	Oct. 16, 2017	Nov. 17, 2017	SME – TBD PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe
8.	<p>Design and implement education/training modules on the new system and SOP that will be implemented to outline the process. This includes:</p> <ul style="list-style-type: none"> • Training Attendance list Training Communication Schedule • Training modules (SOP on Systems Operations) • Training completion certificate 	Nov. 20, 2017	Nov. 26, 2017	SME – TBD, PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe
Q4 – January – March (Air and Biodiversity)				

<p>9.</p>	<p>Discovery requirements completed, to manage ESMD OSM air/biodiversity data:</p> <ul style="list-style-type: none"> • Metadata descriptive structure (pictures, station names, parameter collected) • QA/QC standards and validation protocols: current documentation available (ISO standards, instrumentation standards, etc) • Data importing capabilities: FTP required, standardization of the data importing process • Vendor (laboratories) engagement in the analysis/validation process: current processes in place for the different labs, templates used for the processing of the data, standardization of the current processes across all vendors 	<p>Jan. 15, 2018</p>	<p>Mar. 12, 2018</p>	<p>SME – TBD, PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe</p>
<p>10.</p>	<p>Identify roles and their responsibilities in the proper OSM water quantity data management processes within the system:</p> <ul style="list-style-type: none"> • System administrator • Field technicians requiring access to input the data. • Scientists/QA/QC Analyst performing the validation and QA/QC applying the QA/QC standards to the information 	<p>Mar. 12, 2018</p>	<p>Mar. 16, 2018</p>	<p>SME – TBD, PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe</p>
<p>2018-2019</p>				

11.	<p>MILESTONE: Standard operating procedures (SOPs) outlining the overarching process (who, what and how) on the operation and management of the data management system outlining the following:</p> <ul style="list-style-type: none"> • Objective • Definitions • Roles and responsibilities • Process Steps • References 	Mar. 19, 2018	Apr. 16, 2018	SME – TBD, PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe
12.	<p>Design and implement education/training modules on the new system and SOP that will be implemented to outline the process. This includes:</p> <ul style="list-style-type: none"> • Training attendance list training communication schedule • Training modules (SOP on systems operations) • Training completion certificate 	Apr. 16, 2018	Apr. 20, 2018	SME – TBD, PM – Elis Valera, SA – Massie Kitagawa, Oversight – Rita Lazar-Tippe

Project Plan Summary: *Please summarize the monitoring including relevant information such as background, objectives, monitoring area, methods/monitoring design, assumptions, outcomes, and references. These should align with the information provided in Appendix 1: Annual Monitoring Schedule.*

The OSM program which consists of EMSD/AEP and ECCC (Environment Canada) had agreed upon the principle of implementing a federated model for creating and managing OSM data. In the federated model the partners that create, manage and expose OSM data are the stewards.

Currently EMSD/AEP does not have a centralized OSM data management system. The system is a repository of data collected by EMSD/AEP throughout certain stages of the data life-cycle (collect and process, analysis and validation and extraction). The focus of the 2017-18 EMSD/AEP data management system is to centrally house and make publicly available all of the EMSD/AEP OSM water data. To ensure data availability, the data management system will require interoperability with a portal, either as an extension (system module as part of the system) or a separate product that tightly integrates.

It needs to be noted that the success of the data management system and data portal heavily relies on a robust data management program as articulated in the OSM activity work plan D-5-1718. In absence of an executive mandated and fully adopted data management program, data quality will be impacted and the federated model of the OSM program will be extremely difficult to implement.

Appendix 1 – Detailed Multi-Year Financial Breakdown: if changes are to be made then an Addendum must be Complete and Approved.

(Complete the following detailed financial breakdown; add or delete categories as required)

Budget requirements	Year 1 (201X- 201Y)		Year 2 (201X- 201Y)		Year 3 (201X- 201Y)		Year 4 (201X- 201Y)		Year 5 (201X- 201Y)	
	OSM Funding	External Funding	OSM Funding	External Funding	OSM Funding	External Funding	OSM Funding	External Funding	OSM Funding	External Funding
1) Salaries and benefits										
a) SME and Directors for all medias (\$ 100 / hour)	56,000									
b) Project Manager (\$ 80 / hour)	16,000									
c) Trainer (\$ 50 / hour)	5,000									
d) Lead (IT) (\$ 100 / hour)	28,000									
e) Support Analyst (\$80 / hour)	50,000									
2) Operations and Maintenance										
a) Data Management System (licenses and support)	275,000		275,000		275,000		275,000		275,000	
3) Consumable Materials and supplies										
a) <i>(Describe Consumable Supply)</i>										
4) Travel										
a) Conferences and meetings <i>(identify conference/meeting)</i>										
b) Field work - travel										



c) Project-related travel										
5) External Contracts										
a) Data Management System - Vendor (system design, setup, configuration, test and implementation)	100,000									
b) Enabling enhanced features, capabilities and automation			60,000		60,000		60,000		60,000	
Grand Total	530,000		335,000		335,000		335,000		335,000	

Appendix 2 – Staffing Plan

(Complete the following detailed staffing plan; add or delete categories as required)

	Year 1 – Budget Allocation		Year 2 – Budget Allocation		Year 3 – Budget Allocation		Year 4 – Budget Allocation		Year 5 – Budget Allocation	
	OSM Funding	External Funding	OSM Funding	External Funding	OSM Funding	External Funding	OSM Funding	External Funding	OSM Funding	External Funding
Responsible Role										
Science Expertise										
Technical/Field Staff										
Administrative and Program Coordination										
Grand Total <i>(inserted into Appendix 2)</i>										\$

Appendix 3 - Approvals

Project Submitted by:		
Name: Rita Lazar-Tippe		
Organization: EMSD/AEP	Signature:	Date:
Project Approved by:		
Dr. Monique Dubé (AEP)		Dr. Kevin Cash (ECCC)
Signature		Signature
		
Date		Date