

FOCUSED STUDY ACTIVITY WORK PLAN

General Information

| | | |
|---|--|----------------------------|
| | | |
| Work Plan Unique Identifier: | A-CM-1-1718 | |
| Focused Study Activity Title: | Community Ambient Air Odour Study | |
| Focused Study Category: | Study to Establish the Current Environmental State | |
| Geographic Location (<i>choose from drop-down menu. If Project Location is in more than one area choose from second drop-down</i>) | Regional Municipality of Wood Buffalo | Athabasca Oil Sands Region |
| Monitoring Site(s) Coordinates (<i>latitude and longitude</i>) | Select communities with the Municipality of Wood Buffalo, including Fort McKay and Fort McMurray. | |
| Project Leader: | Bob Myrick (AEP) Sanjay Prasad (WBEA) | |
| Organization and contact information: | <p>Environmental Monitoring and Science Division Alberta Environment and Parks 9th Floor, 9888 Jasper Avenue NW Edmonton, Alberta, T5J 5C6 Bob.Myrick@gov.ab.ca; tel. (780) 229-7290</p> <p>Wood Buffalo Environmental Association 100-330 Thickwood Blvd Fort McMurray AB T9K 1Y1 sprasad@wbea.org; tel. (780) 799-4420</p> | |
| Date Study initiated: | April 2017 | |
| Monitoring Category: <i>(From OSM long-term plan; choose from drop-down menu)</i> | Atmospheric Monitoring | |
| Strategic Objective of Focused Study: (<i>From OSM long-term plan; choose from drop-down menu</i>) | Objective A1: Detect and report concentration levels and trends of atmospheric substances that are likely to cause adverse human and/or environmental health effects. | |
| Hypotheses: <i>(Briefly outline the specific hypotheses that your focused study is aiming to address)</i> | <p>Perceived odour events in the oil sands region can be related to ambient pollutant concentrations.</p> <p>Ambient pollutant concentrations can be used with meteorological conditions to identify potential odour sources.</p> | |

| | |
|--|---|
| <p>Deliverables:</p> <p><i>What tangible goal (s) and/or product(s) will the monitoring produce and when?</i></p> | <p>The following reporting products will be produced:</p> <ul style="list-style-type: none"> • Community odour quarterly reports will be produced within three months following the end of the quarter. • An annual Community Odour Monitoring Project report for the Wood Buffalo region will be produced by June 30 2018. |
|--|---|

Detailed Study Plan

(Please provide detailed information on the specifics of your focused study including – (**keywords, hypothesis and the assumptions and constraints behind your hypothesis**))

Provide a maximum of 10 key words that describe this project. Use commas to separate them:

Odour events, community odour, odour monitoring, Fort McKay, volatile organic compounds, sulphur compounds

Describe how you will test your hypothesis:

Odours are a significant issue in some communities in the Wood Buffalo region. The Wood Buffalo Environmental Association (WBEA) has conducted several studies to understand the odour issue in these communities (see www.wbea.org and click on Odours). Activity A-CM-1-1718 includes the Wood Buffalo region Community Odour Monitoring Project.

The Community Odour Monitoring Project (COMP) will be based on a pilot project conducted from 2013 to 2015 in Fort McMurray. COMP will be expanded to other communities in the Wood Buffalo region including Fort McKay and Anzac. Volunteers from these communities will be trained to quantify the level of odours, and to report these observations. When community volunteers experience odours, they will be asked to record the odour through one of four methods: 1) website and 2) smart phone application. The information from volunteers will be systematically tabulated and reported.

Results from COMP will be analyzed with ambient air quality data from community ambient air monitoring stations. The WBEA will explore additional methods to identify and quantify odour events using specialized equipment to provide additional data for comparison with the results from COMP. The COMP is intended to be a three year study beginning in July 2017.

Assumptions and Constraints behind the hypothesis and the testing method:

There will be sufficient volunteers for the COMP program.

There will be odour events during the study period.

There will be existing air monitoring within or near by the participating communities.

The odour causing compound(s) can be measured by deployed technologies (as described by work plan A-CM-8-1718).

References:

Wood Buffalo Environmental Association. Community Odour Monitoring Program.
<http://www.wbea.org/odours/community-odour-monitoring-project>

Data Management

If this work generates data please summarize your project-level data management plan.

| Deliverables | Timeframe |
|--|--|
| Data Collection Period: <i>Field work</i> | Start : 2017-07-01 End: 2020-06-30 |
| Data Analysis Period: <i>Laboratory analysis and QA/QC of data</i> | Start : 2017-09-01 End: 2020-12-31 |
| Data Release Date: <i>Metadata and data consistent, complete and meet basic standard format for publication in Open Data; on or linked to JOSM portal</i> | COMP data will be provided in quarterly reports produced within three months after the end of the quarter. |

Reporting and Publications

Provide information on the anticipated reports / publications. (Insert additional rows if needed)

| Expected Subject/Titles of Publications or Reports | Short Description of Publication or Report | Expected Year of Publication |
|---|--|------------------------------|
| Community Odour Monitoring Program (COMP) Quarterly Data Report | Community Odour Monitoring Program Quarterly Report | 2017 and 2018 |
| Community Odour Monitoring Program (COMP) Annual Report | Collection and summarization of community odour tracked observations in the region for the Year 1 (Jul 1, 2017 to Jun 30, 2018) fiscal year. | 2018 |
| | | |
| | | |

Technical / Professional Roles and Responsibilities

Identify members of the monitoring team/organization, their roles and responsibilities. Identify monitoring organization leads if different from overall monitoring activity lead. (Insert additional rows if needed)

| Role | Responsibilities | Resource Name/Organization |
|--------------------------|--|---|
| Project Lead | Provide administrative planning implementation, and coordination support activities. | Sanjay Prasad |
| Technical Support (WBEA) | Provide technical field support to contractors and monitor all field instrumentation. | WBEA Field Technical Staff |
| Data manager | Data QA/QC | WBEA Data Management Staff |
| COMP Volunteers | Record odour event according to COMP training Attend quarterly meeting to review and integrate recorded odour events. | Community members within the Municipality of Wood Buffalo |
| WBEA staff contractor | Coordinate COMP meeting Review, integration and report odour data. | WBEA |
| Project Guidance | Provide advice to the technical aspects of the monitoring program from the stakeholder perspective. | WBEA Odour Committee |

Deliverables (Year 1) If your Focus Study is longer than 1 year then complete **Appendix 3** for multi-year deliverables breakdown

Provide a summary of tangible quarterly deliverables. Identify major project areas (deliverables) and results that can be identified as a tangible goal. This could include: field work, lab work/ analysis, evaluation, data, reports, publications, SOPs etc. Do not define process as your Deliverable e.g. ‘fly to Ft. McMurray to conduct fieldwork’ or ‘seek Director approval for report’.



| |
|--|
| |
| Deliverable(s) (please provide enough information to support status reporting) |
| Q1 – April to June |
| Participate in AER/AEP/ECCC Fort McKay Community Odour Recommendations meetings |
| Review of current RSC and VOC parameters with Fort McKay Recommendations for Air and Odorant Parameter Focal List |
| |
| Q2 – July to September |
| Design and plan a Community Odour Monitoring Program (COMP) for communities in RMWB |
| Implement the COMP for communities in RMWB |
| Provide design of the COMP plan to AEP |
| Develop and implement a Reduced Sulphur Compounds (RSC) monitoring program at selected AMS sites |
| Complete and maintain records of RSC sample collection and deployment at selected AMS sites |
| Maintain collection, processing, validation and reporting of COMP and RSC sample data and meta-data into WBEA data management system |
| Q3 – October to December |
| Implement the COMP for communities in RMWB |
| Complete and maintain records of RSC sample collection and deployment at selected AMS sites |
| Maintain collection, processing, validation and reporting of COMP and RSC sample data and meta-data into WBEA data management system |
| Q4 – January to March |
| Implement the COMP for communities in RMWB |
| Complete and maintain records of RSC sample collection and deployment at selected AMS sites |
| Maintain collection, processing, validation and reporting of COMP and RSC sample data and meta-data into WBEA data management system |
| Integrate COMP and RSC data with available ambient air monitoring data. Submit a summary of 2017 COMP and RSC data results to AEP |
| Review and provide recommendations for the COMP for communities in RMWB |
| |

Detailed Financial Breakdown – Year 1 of 3 (2017-2020)

Also complete **Appendix 2** for the multi-year financial breakdown

| Budget requirements – List areas that require budget expenditures: (ADD OR DELETE BUDGET CATEGORIES AS REQUIRED) | OS Funding | External Funding (outside JOSM) |
|--|------------------|------------------------------------|
| O&M - Operations and Maintenance: | | |
| Helicopter Costs | \$ | \$ |
| Field Costs | \$ | \$ |
| Data Management | \$ | \$ |
| Internal Lab Analysis | \$ | \$ |
| Consumable Materials & Supplies | \$ | \$ |
| Sub-Total | \$ | \$ |
| O&M - Travel | | |
| Field Work | \$ | \$ |
| Conferences (<i>identify conference</i>) | \$ | \$ |
| Meeting (<i>identify meeting</i>) | \$ | \$ |
| Sub-Total | \$ | \$ |
| O&M - External Contracts : | | |
| Goods and Services Contract (<i>see Appendix 4</i>) | \$250,000 (WBEA) | \$ |
| External Lab Analysis | \$ | \$ |
| Sub-Total | \$ | \$ |
| Salaries: | | |
| Project Coordinator | \$ | \$ |
| Technical / Professional Assistants | \$ | \$ |
| Field Staff | \$ | \$ |
| Sub-Total | \$ | \$ |
| Total Salaries | \$ | \$ |
| Total O&M | \$250,000 | \$ |
| 2017-2018 GRAND TOTAL* | \$250,000 | \$ |

Appendix 1 - Approvals

| | | |
|--|------------|--|
| Project Submitted by: | | |
| Name: | | |
| Organization: | Signature: | Date: |
| Project Approved by: | | |
| Dr. Monique Dubé (AEP) | | Dr. Kevin Cash (ECCC) |
| Signature  | | Signature  |
| Date | | Date |

APPENDIX 2 – Detailed Multi-year Financial Breakdown (Complete the following detailed financial breakdown; add or delete categories as required)

| Budget requirements | Year 1 (2017- 2018) | | Year 2 (2018- 2019) | | Year 3 (2019- 2020) | |
|--------------------------------------|---------------------|---------|-----------------------|---------|-----------------------|---------|
| | Cash | In-kind | Cash | In-kind | Cash | In-kind |
| 1) Salaries and benefits | | | | | | |
| a) Investigators | | | 0.05 FTE (\$5,000) | | 0.05 FTE (\$5,000) | |
| b) Technical/professional assistants | | | | | | |
| c) Field Staff | | | | | | |
| d) | | | | | | |
| 2) Operations and maintenance | | | | | | |
| a) Facilities | | | | | | |
| b) Equipment | | | | | | |
| c) Lab analysis | | | | | | |
| d) Data management | | | | | | |
| e) Field work | | | | | | |
| 3) Consumable Materials and supplies | | | | | | |
| a) | | | | | | |
| b) | | | | | | |
| 4) Travel | | | | | | |
| a) Conferences and meetings | | | | | | |
| b) Field work | | | | | | |
| c) Project-related travel | | | | | | |
| 5) Dissemination & Engagement | | | | | | |
| a) Publications/Reports | | | | | | |
| b) Translation (if required) | | | | | | |

| | | | | | | |
|----------------------------------|-----------|--|-----------|--|-----------|--|
| c) Communications | | | | | | |
| d) Stakeholder Engagement | | | | | | |
| e) Indigenous Peoples Engagement | | | | | | |
| 6) External Contracts | | | | | | |
| a) WBEA (WBEA – See Appendix 5) | \$250,000 | | \$300,000 | | \$300,000 | |
| Grand Total | \$250,000 | | \$305,000 | | \$305,000 | |

APPENDIX 3 –Years 2 and 3 Deliverables (Complete the following detailed breakdown. Provide a summary of tangible quarterly deliverables. Identify major project areas (deliverables) and results that can be identified as a tangible goal.)

| |
|---|
| Year 2 (2018- 2019) |
| Deliverable(s) (please provide enough information to support status reporting) |
| Q1 – April to June |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| |
| Q2 – July to September |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| |
| Q3 – October to December |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| COMP Report for July 1, 2017 to June 30, 2018 |
| Q4 – January to March |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| |
| |

| |
|---|
| Year 3 (2019- 2020) |
| Deliverable(s) (please provide enough information to support status reporting) |
| Q1 - April to June |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| |
| Q2 - July to September |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| |
| Q3 - October to December |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| COMP Report for July 1, 2018 to June 30, 2019 |
| Q4 - January to March |
| Continue odour monitoring program with volunteers |
| COMP meeting and data integration |
| Ongoing analysis of COMP data as it is being collected |
| |
| |

Appendix 4 – Detailed Budget for External Contractor (WBEA)

| Budget requirements | Description | Year 1 (2017- 2018) | |
|--|--|---------------------|------------------|
| | | OSM Funding | External Funding |
| 1) Salaries and benefits | | | |
| a) Technical and Field Staff | Portion of 1 Program Coordinator and WBEA technical staff | \$8,977 | |
| b) Administrative and Program Coordination | Portion of 7 Administration staff and 2 contracts | \$27,360 | |
| c) Science Expertise | Science and Technical consultation | - | |
| 2) Operations and Maintenance | | | |
| a) Vehicles and Transportation | Leased vehicles, repairs, insurance, gas | \$278 | |
| b) Helicopter | Flight costs + landing fees | | |
| c) Data analysis | Analysis of semi-continuous parameters (RSC adsorbent tubes) and COMP data analysis | \$108,000 | |
| d) Data management | Data reporting, QAQC validation, Data Translation, Software License, IT infrastructure and support services, website reporting, rss feeds AQHI, emergency response, data backups, data security, data hosting and publications | \$9,044 | |
| e) Station and Site Maintenance | Station infrastructure and site access repairs | | |
| f) Data Telemetry and cell phone costs | Station modems, data plans, cell phone and satellite phone plans, emergency response data feeds | | |
| g) Station and Facilities Expenses | Station Insurance, Tower Lease, Land Agreements, Utilities, Office Equipment Lease and expenses | \$1,475 | |
| h) Building Leases and Occupancy Costs | Taiganova bays lease and occupancy costs | \$9,866 | |
| i) Quality Assurance | Data Audits, Documentation Management, QAP, Site Documentation -AMD) | | |
| j) Safety | Site Access training, PPE, general safety training, Certificate of Recognition (COR), Health and Safety Policies | \$308 | |

| | | | |
|---------------------------------------|---|----------|--|
| k) Shipping | General shipping fees, brokerage fees, freight charges | | |
| l) Emergent Items | Unplanned emergency items that needs to be resolved within fiscal year. Requires special resolution and approval to be spent. | \$3,494 | |
| 3) Consumable Materials and supplies | | | |
| a) Support Gases | Reference standards, calibration gases, support gases | | |
| b) Materials and Consumables | Critical parts, spare parts, pump rebuild kits, pumps, scrubbing materials, tubing, inlet filters, tools, sample lines, electrical wires, etc. | | |
| 4) Travel | | | |
| a) Field work – travel | Fort Chipewyan - air travel, accommodation and vehicle rental, per diems | | |
| b) Program work - travel | | \$2,055 | |
| c) Conferences, training and meetings | Staff Development, Presentations, Air - specific workshops, conferences | \$1,367 | |
| 5) External Contracts | | | |
| a) External Professional Fees | External Contract fees for COMP App development for volunteers, Community Outreach to Promote Odour reporting, Implementation of COMP program, advertising, Annual Integration Report | \$70,000 | |
| b) Stakeholder Honorariums | Honorariums for Indigenous and ENGO involvement | \$6,028 | |
| c) Financial Audit and Legal | Perform financial audits and legal reviews of contracts and human resource matters | \$1,233 | |
| | | | |
| 6) Capital Expense | | | |
| a) Capital - Spare Parts | Critical and Spare parts over \$1000 in value | | |
| b) Capital - Equipment | Equipment Replacement and new Inventory | | |
| c) Capital - Support Equipment | Computers, modems, data loggers, IT | | |

| | | | |
|-------------------------------|------------------------------------|------------|--|
| | related | | |
| d) Capital - Office Equipment | Office Equipment - Program related | \$514 | |
| Grand Total | | \$ 250,000 | |