



**ENVIRONMENTAL MONITORING TECHNICIAN TRAINING FOR FIRST NATIONS
AND MÉTIS COMMUNITIES IN OIL SANDS REGIONS, ALBERTA**

PROGRAM REPORT 2016-2017 PILOT YEAR

Released July 2017

Page intentionally blank

Environmental monitoring technician training for First Nations and Métis communities in Oil Sands regions, Alberta, program report 2016-2017 pilot year

Zoey Wang and Krista Tremblett

Any comments, questions, or suggestions regarding the content of this document may be directed to:

Environmental Monitoring and Science Division
Alberta Environment and Parks
10th Floor, 9888 Jasper Avenue NW
Edmonton, Alberta T5J 5C6

Tel: 780-229-7200
Toll Free: 1-844-323-6372
Fax: 780-702-0169
Email: EMSD-Info@gov.ab.ca
Media Inquiries: AEP.Mediainquiries@gov.ab.ca
Website: <http://environmentalmonitoring.alberta.ca/>

This document can be found at: <https://open.alberta.ca/publications/9781460135099>

Recommended citation:

Alberta Environment and Parks. (2017). Environmental monitoring technician training for First Nations and Métis communities in Oil Sands region, Alberta, program report 2016-2017 pilot. ISBN No 978-1-4601-3509-9 available at: <https://open.alberta.ca/publications/9781460135099>

ISBN No. 978-1-4601-3509-9

© 2017 Government of Alberta

Table of Contents

- 1.0 Environmental Monitoring Technical Training 4
 - 1.1 The Vision 4
 - 1.2 The Pilot Program 4
- 2.0 Looking Back and Moving Forward 4
- 3.0 Looking Back 5
 - 3.1 Desired Outcome 5
 - 3.2 Goals 5
 - 3.3 Assumptions 5
 - 3.4 Program Supporters 5
 - 3.4.1 Program Management and Administration 5
 - 3.4.2 Program Contributors 6
- 4.0 Program Design and Delivery 7
 - 4.1 Program Design 7
 - 4.2 Recruitment Strategy 7
 - 4.3 Program Delivery 8
- 5.0 Results 9
 - 5.1 Participant Evaluation 9
 - 5.1.1 Participant reaction 9
 - 5.1.2 Participant learning 10
 - 5.2 Instructor feedback 12
- 6.0 Factors for Success 14
- 7.0 Learnings 15
- 8.0 Appendices 19
 - 8.1 Appendix A: First Nations and Métis Settlements involved in 2016-17 pilot 20
 - 8.2 Appendix B: Application Form 21
 - 8.3 Appendix C: Program Description 23
 - 8.4 Appendix D: Recruitment Strategy 25
 - 8.5 Appendix E: 2016 Pilot Program Schedule 27

1.0 Environmental Monitoring Technical Training

1.1 The Vision

Robust Indigenous Peoples' participation in ambient environmental monitoring in Alberta.

1.2 The Pilot Program

Indigenous communities¹ in the oil sands region have expressed the desire to be equipped to participate in environmental monitoring and help answer their own questions about changes on the land.

An Indigenous Environmental Monitoring Technician Training Program Pilot was launched in 2015 to enable more robust Indigenous Peoples' participation in environmental monitoring in the oil sands region. A three-year collaborative initiative funded under the Ambient Environmental Monitoring Plan for Oil Sands Development, the Pilot focuses on building on technical skills of Indigenous Peoples in environmental monitoring, and facilitate establishing working relationships between Indigenous Peoples and scientists. Twenty-four (24) Indigenous participants from across the oil sands region have completed the training program since 2015. The pilot will conclude in 2017-18, and a three-year summative evaluation will be conducted to assess program results and effectiveness.

This report is to evaluate results and feedback, and to share the successes and lessons learned in the 2016-17 delivery year.

2.0 Looking Back and Moving Forward

In assessing the successes and lessons learned from delivery in 2016-17, the following questions were considered:

- Were project outcomes achieved?
- What was the impact of the training?
- Which program elements worked well to support the outcomes?
- What would we do different next time?

This report provides a look back at delivery of the Environmental Monitoring Technician Training Pilot in 2016-17, highlighting the success, challenges, observations and learnings. As part of a continuous improvement process, this information will help shape design and delivery in 2017-18 and the full program review after Year Three.

¹ Communities include First Nations, Métis Settlements and Métis Locals within the oil sands region.

3.0 Looking Back

3.1 Desired Outcome

Enhanced technical skills and professional connections enable Indigenous Peoples participation in oil sands monitoring initiatives.

3.2 Goals

- To enable Indigenous Peoples participation in field monitoring with industry or government;
- To enhance technical competence in surface water quality monitoring, wildlife monitoring and field safety;
- To provide an opportunity for scientists and Indigenous communities in the oil sands region to build connections and working relationships.

3.3 Assumptions

- Capacity building is a priority for Indigenous communities in the oil sands region.
- The natural progression from training and capacity development is employment, and efforts to recruit local Indigenous technicians will be an essential component in achieving Indigenous community involvement in the implementation of environmental monitoring in the oil sands region.
- Capacity building will lead to opportunities for graduates to participate in environmental monitoring.
- External partners will continue to provide in-kind support (e.g., computer lab, advice on content/format, delivery).

3.4 Program Supporters

3.4.1 Program Management and Administration

In 2016-17, Alberta Environment and Parks, Environmental Monitoring and Science Division (EMSD) led the management and administration of the Environmental Monitoring Technician Program Pilot. EMSD coordinated the planning and implementation tasks required to achieve program outcomes. In 2016-17, EMSD's Indigenous Knowledge, Community Monitoring and Citizen Science Branch dedicated up to 80 per cent of one staff person's time for program planning and development, with support from other team members. Staff commitment including:

- Planning and curriculum development;
- Program delivery;
- Project management;
- Contract management; and
- Evaluation and reporting.

3.4.2 Program Contributors

The Pilot was a result of collaboration with Provincial and Federal governments, and other agencies have worked together and provided support in the planning, delivery and evaluation of the training. Table 1 below outlines the roles of contributing organizations in 2016-17.

Table 1 Contributing Organizations and Roles

Organization	Role					
	Project manager	Program administration	Program Planning & Curriculum Design	Course delivery (in-kind)	Facility and equipment provision	Funder
Environmental Monitoring and Science Division	✓	✓	✓	✓	✓	✓
Environment and Climate Change Canada			✓	✓	✓	✓
Alberta Energy Regulator			✓	✓	✓	
Alberta Biodiversity Monitoring Institute			✓	✓	✓	
First Nations Technical Services Advisory Group			✓	✓		
Canada's Oil Sands Innovation Alliance			✓	✓		
InnoTech Alberta			✓		✓	
Other*				✓		

*Other service providers include: Raven Rescue, St. John's Ambulance, Parks Canada, Alberta Motor Society, etc.

4.0 Program Design and Delivery

Training program content and delivery was adapted based on participants' evaluation and instructors' feedback from different service providers and supporting organizations.

4.1 Program Design

Curriculum design considered both the practicality of training delivery within the designed time frame and the interests and needs of participants and scientists.

In 2015-16, the curriculum focused on surface water quality monitoring, wildlife monitoring techniques, and field safety which aligns with the standards and protocols that Government of Alberta follows. Building upon an evaluation of program implementation in 2015-16 and recommendations from the previous cohort, the 2016-17 program curriculum was adapted to cover the full life-cycle of monitoring, (design, delivery, evaluation and reporting) and more closely align with oil sands monitoring. Specifically, the curriculum covered:

- The basics of environmental monitoring program design;
- Surface water monitoring;
- Fish health monitoring;
- Safety training in environmental monitoring; and
- Data management tools.

4.2 Recruitment Strategy

Emails were sent out, followed up with phone calls, to 53 Indigenous communities (Chief and Chair, consultation contacts, land department, band administrator and/or other contacts) in the oil sands region (Figure 1). Provided with program summary and an application form (Appendix C), each community was asked to submit up to three applications including a letter of support from community leadership for the applicants.

Applications were evaluated by a panel of EMSD staff using a scoring system. The process first determined whether applicants had the pre-requisites (i.e., 18 years or older and physically fit, ability to read and write in English, Grade 10 math, a valid driver's license, ability to swim, basic computer skills). Scoring was based on candidates' existing relevant experience in environmental monitoring, their interest and commitment to the program demonstrated in their applications, and community or employers' support to participate in the program (Appendix E).

Ten participants were selected based on these criteria. These individuals comprised a diverse group with an age range of 24-52 (mean age = 33.7). Eight participants were from First Nations and two from Métis Settlements. At the time of their application, all of the participants were employed in an environmental monitoring related occupation.

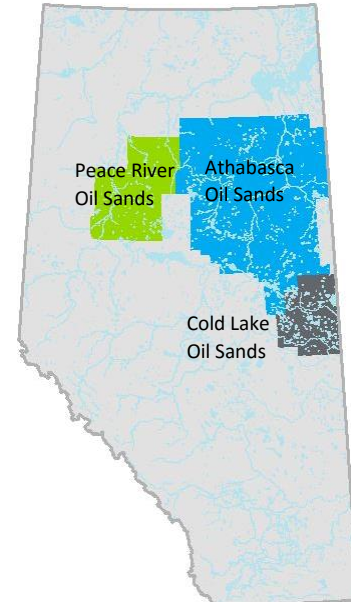


Figure 1: Oil Sands Region, AB

4.3 Program Delivery

The pilot ran from August to December, 2016, one week per month, for five months. Most courses took place in Edmonton, with a few field courses in surrounding areas (e.g., Rocky Mountain House). The format included classroom sessions (e.g., information session, presentations, and workshops) and hands-on field training.

There were 20 sessions on different topics provided to participants over the five weeks. The delivery span of each topic varied from half a day to three days. Thirty per cent of the sessions were field based, 35 per cent focused on hands-on practice in a classroom setting, and 35 per cent delivered as information sessions.

Cost including lodging, meals, and course materials were covered by the program. Participants covered their travel expenses associated with this program, with support from their communities and the program, if/when needed.



Figure 2: Chris Ware (EMSD) (middle) sharing information on lake monitoring with Randy Parenteau (left) and Arnold Fontaine (right) (2016 participants).

5.0 Results

The 2016-17 program was successfully delivered and well received. Nine out of ten participants completed the 5-week training (one participant was not able to continue due to work obligations). Six out of nine graduates, joined by family and friends, attended the graduation ceremony in March 2017 to celebrate completion of the program. Staff from EMSD and InnoTech Alberta were also in attendance.

Formative and summative feedbacks were gathered from the participants to assess their experience. An evaluation survey was sent out to instructors and guest speakers to invite their observations on interacting with these participants.

5.1 Participant Evaluation

5.1.1 Participant reaction

Overall, participants found the program quite useful and well-coordinated, and were very appreciative of the experience.

Feedback and suggestions on curriculum and logistics are highlighted below.

Curriculum design.

- In week one provide a scenario to participants to work on throughout the five weeks. As participants learn new skills over the course, they could come back and solve the scenario in week five.
- Engage participants' interest and needs in program upfront (prior to the program start) to develop the curriculum.
- Component focusing on application and synthesis of information would be useful.

Program delivery. Many participants felt more engaged in field elements and hands-on exercise during the pilot. Sample of survey comments:

- Elder's presence and prayer is important.
- Introductory team building activity (e.g., a camping trip) and to apply wilderness survival skills would be good to have for future programs.
- More support could be provided to participants during and after the course. Examples:
 - Funding.
 - Field equipment.
 - A tool to use in communities to identify issues or concerns.
 - Knowledge of resources and network available to support as needed.
- Choose local areas (participants' communities) for field skills building (water monitoring).
- More hands-on learning opportunities and time would be great.

Logistics. Participants' comments regarding logistic coordination varied from person to person, and seemed to relate directly to personal experiences. The majority of the participants experienced a "well-organized" program during the five weeks.

Eight out of nine participants (8/9) felt the timing was good/great. Seven out of nine (7/9) felt the program frequency was very good/good. Seven out of nine (7/9) felt the course location worked well. Specific comments include:

- Shuttle arrangement is helpful.
- Schedule is tight/works out great.
- Accommodation is great/not good.
- Long break during two training weeks is great.

Some challenges being expressed regarding logistics include:

- Long drive home after long weeks was challenging, especially in the winter.
- Late checkout on Fridays would be good.
- The cost to attend the course was high.
- Reimbursement amount is low.

5.1.2 Participant learning

Overall, participants found the skills and knowledge acquired and connections made during the course being incredibly valuable to their current jobs and future professional development. The majority of participants felt more inspired and better equipped to pursue a career in environmental services as a result of this training.

Below are some key findings related to participant learning.

Drivers/Reasons for taking the program

- Skills, awareness, knowledge
 - Gain knowledge and skills (data).
 - Understand key issues facing the communities.
 - Professional development – obtaining safety certificates.
 - Become proficient in monitoring community's environment, protect the land.
 - Other (Traditional Ecological Knowledge).
- Connections
 - Establish new/useful connections.
 - How to better work collaboratively in environmental monitoring.

Current needs

- Leadership support
 - Make leadership (in Indigenous communities) aware of the value in environmental monitoring (water, berries, wildlife), and to better understand concerns.
- Resource and information
 - Métis Settlement need more resources to conduct environmental monitoring.
 - Information on how communities can be better informed about opportunities in participating in environmental monitoring.
 - Maintain contacts.
 - Relay information and share with communities.

- Resources (e.g., field equipment, staff expertise) from the province for environmental monitoring would better enable community initiatives and participation.
- More training
 - More training (source water protection, initiate a source water protection plan; compliance monitoring).

Challenges

- Time and opportunity limits.

Multiple participants identified the challenge of not having enough time to practice what they learned and to internalize new information (i.e., session with Alberta Energy Regulator, ArcGIS, GPS and mapping, and vegetation identification). Participants would like to spend a lot more time in these areas to be able to grasp and absorb the information.

- Physical challenge.

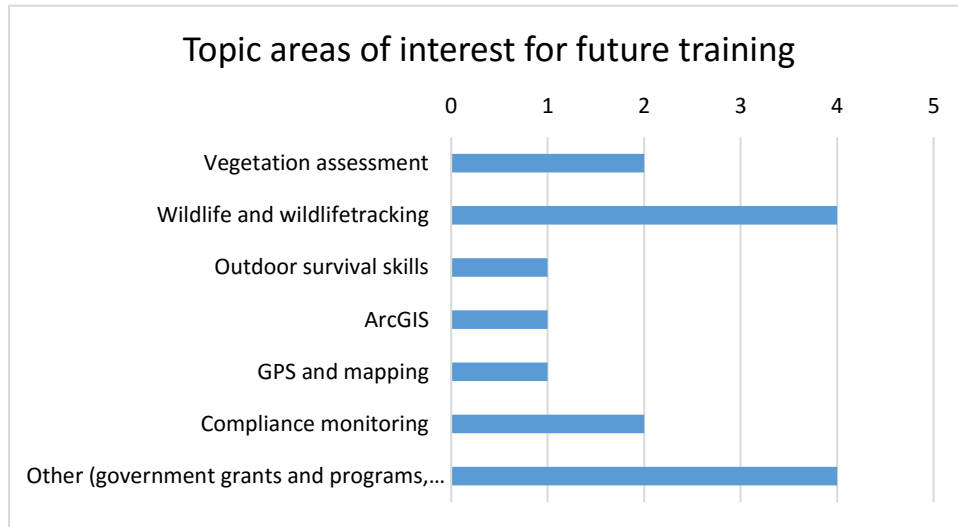
For swiftwater rescue and ice rescue training, jumping into the water was challenging for some people because of physical or medical conditions.

Participants' future plans

- Seek career opportunities
 - To participate in environmental monitoring.
 - In environmental field while keeping close to Indigenous culture.
- Support and initiate community-based monitoring programs
 - Initiate a community based monitoring (CBM) program and start a company. Year 1, plan a community mapping project; Year 3, develop a CBM program business plan; Year 5, start a new monitoring company.
 - Support existing CBM programs. Year 1, help community with setting up environmental monitoring programs; Year 3, support the clean-up of garbage dump; Year 5, continue supporting the recycling programs in schools and administrations.
- Not sure:
 - More training is needed.

Areas of interest for future training

Chart 1: Topic areas of interest for future training



5.2 Instructor feedback

A survey was sent to 17 instructors and guest speakers who spent time and shared knowledge and information with participants. 14 instructors provided feedback on their interactions and experience.

In general, instructors and guest speakers had a satisfying experience with the group, and with the program organizer. The majority of the instructors' main intention for being involved in the program was to share knowledge, and they have found great value in interacting with the group.

Key findings from the instructor survey include:

Program elements that worked well:

- Interactive communication styles – giving participants time to talk about their experience and questions;
- Hands-on component/fieldwork (e.g., lab, tour, sampling);
- Simplifying materials, using straight-forward languages that people can relate to;
- Relevant topics and useful skills that participants are interested in;
- Participants' enthusiasm.

Challenges/Areas of improvement include:

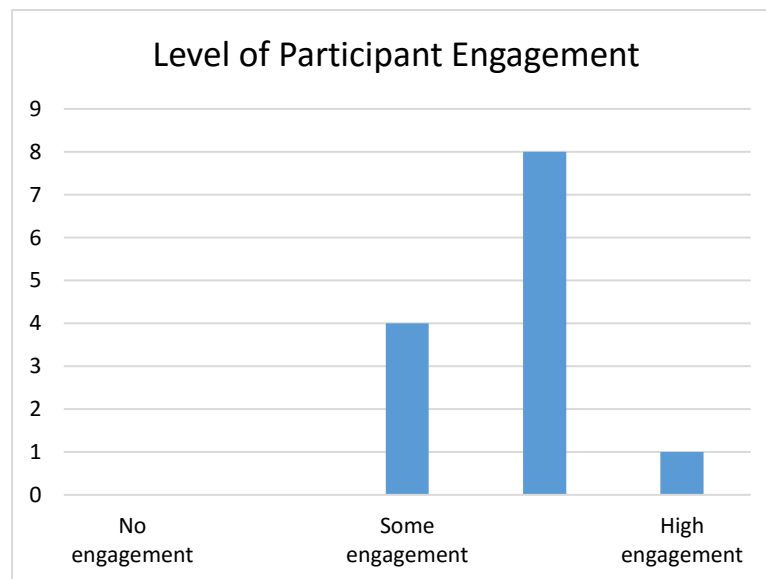
- Maintain audience engagement
 - Cultural barriers;
 - Diverse background and knowledge levels prior to the training.

- Delivery
 - Lack of proper field equipment;
 - Limited session time;
 - Weather (prefer warmer weather to take participants outside).
- Insufficient prior knowledge of the full program and participants
 - The full curriculum outline to understand what would be covered in the program to better prepare materials.
 - Participants’ interests, needs, and skill/knowledge levels on the subject matter.
- Expectation of knowledge and skills application
 - Lack of communication on expectation regarding how people can use it in their work and life.

Instructors’ preference for future programs:

- For future programs, most (12/13) instructors prefer 3-6 months’ (or longer) notice in advance with relevant information in order to prepare for course content and materials.

Chart 2: Most instructors experienced a high engagement level with participants.



6.0 Factors for Success

1. Meeting a need.

The training pilot was initiated to fulfill a need in Indigenous communities for monitoring capacity development. Survey results from 2015-16 and 2016-17 show that all participants would like to receive more training, and that they would recommend this program to others.

2. Project management.

Having a consistent and coordinated project team contributed to the success and efficiency of program delivery. Closely involved in 2015-16, the project lead was able to effectively design and deliver the 2016-17 program based on prior knowledge and experience.

Establishing clear roles and responsibilities also contributed to the successful delivery. Having two external contractors arranging logistics and having an internal staff as the project lead made the accountabilities clear and delivery effective. Further, it helped the project lead to focus on project oversight and content development instead of logistics coordination.

3. Program evaluation.

Continuous learning and evaluation is a key aspect of the pilot. Reflecting on 2015-16 and adapting the program content and delivery based on internal and external feedback have been a significant contributing factor to success. 2016-17 retained program elements that were well-received by the previous cohort, such as wildlife camera set-up, GPS and map reading, and swift water safety training. 2016-17 also incorporated topics that prior graduates expressed an interest in, such as compliance monitoring and incident response.

4. Program champions.

Having leadership support in a time of organizational change is of crucial importance. Recognizing the strategic significance of training, working with Indigenous communities and supporting technical capacity building. In a time with organizational change and when the future of the program beyond the pilot stage is uncertain, the program was able to continue and being successfully delivered because of the champions in the organization.

5. Multi-agency collaboration.

The training pilot program created an opportunity for staff from federal and provincial governments and other organizations to foster relationships, leverage strengths and learn from each other. Connections established with training participants were also of benefits to these governments and organizations as their work proceeds. Having a growing network of program supporters helped enrich the resource pool for Indigenous communities, and maintain the program sustainability.

6. Communities' support and commitment.

The high commitment and graduation rate from both 2015 and 2016 pilot partly resulted from Indigenous communities' support. A letter of support was required from community leadership and/or

employers as part of the application package. As a result, we have seen continuous support from communities, such as tracking participants' attendance, providing budget for participants' travel, and approving participants' time for training.

7.0 Learnings

1. Tailor content to audience.

Program design and curriculum need to consider background and knowledge of participants. Participants' interests and background knowledge vary, which results in different levels of engagement. For example, participants who are field technicians tend to be more engaged in hands-on components such as swift water rescue training, whereas participants involved in managerial activities tend to show more interest in learning about monitoring program design. In addition, participants with prior training in ArcGIS and GPS tend to find the introductory course easy, whereas others found it challenging to acquire basic skills within the one-day course.

2. Skill and knowledge application.

During and after the program, participants expected to have opportunities to put the knowledge and skills they learned into practice. For example, participants suggested adding a team activity to collaboratively design a community-based environmental monitoring program over the five week period. Participants also expressed a desire to be involved in oil sands monitoring projects with scientists after they complete the training.

There needs to be more linkage to connect graduates to oil sands monitoring. In providing more hands-on training opportunities after the five-week program completes, EMSD can work with Indigenous communities in enhancing their specific field skills, as well as maintaining positive working relationships, in the hopes that the Division can rely on communities to conduct ambient monitoring with scientists in the future.

3. Multi-agency collaboration.

Leveraging strengths and collaborating with other departments and agencies in planning and program delivery help to build a powerful network and a sustainable program. In 2016-17, multiple agencies, government departments and individuals from academic institutions were involved in delivering a successful program. For example, Alberta Energy Regulator hosted an information session on compliance monitoring and incident response procedures, and First Nation Technical Services offered a session on source water protection planning.

Other organizations and government departments also expressed their interest in being involved in the future training pilot delivery, such as Environment and Climate Change Canada (wildlife trapping). Expertise and strengths provided by these organizations have complemented what the Division can provide, and addressed participants' needs.

4. Steering committee.

A steering committee with representatives from different agencies is highly recommended for the third year pilot program. The Committee would be responsible for making strategic recommendations and decisions that guide the program. One agency would take the lead and facilitate the operation of this committee. Such a committee would also help in identifying resource needs, expected outcomes and strategies.

5. Consistent Elder presence.

Having an Elder pray and share teachings and wisdom with the program participants is of significant value to the program. Forming a group of Indigenous technicians with western scientists can be challenging, as they do not start with shared cultural values and perspectives. An Elder brings in the respect and a mutual understanding that we are working towards the same goal to protect the land. An Elder also brings in grounding energy that stabilizes the group and guides the program in a culturally-respectful way.

6. Managing expectations.

Clearly communicating what the program is and is not with prospective participants is essential. Participants joined the program with different motivations: pursuit of full-time jobs with refined skills, professional development (e.g., safety certifications), contributing to the development of community-based programs, establishing environmental services companies, getting exposure on specific topics (e.g., compliance monitoring, traditional land use study), to better monitor and protect the land and so forth. Therefore, clear communication throughout the program is of great importance as it is the first step in building a trustworthy working relationship.

7. Transparent documentation of process.

Clear guidance documents and processes need to be established from program coordination to curriculum development, to build common understanding, clarify assumptions and deliver an effective, efficient program.

Recruitment strategy and process

- Develop and document recruitment strategy, including the approach and steps to share information, follow up and confirm interest and commitment from Indigenous communities in the oil sands area.
 - Document Indigenous and western perspectives and considerations in recruitment strategy where applicable. For example, provide the applicants the option to send in a video clip about themselves and their passion and interest in getting into the program in addition to a written application. Clearly communicate the option in the recruitment package shared with each Indigenous community.
- Clearly document the selection criteria of the participants from Indigenous communities, including pre-requisites, considerations of First Nation and Métis representation and geographic representation from the three oil sands deposits.

Steering committee

- Document the development of project charter, terms of reference, project vision and goals.
- Document decisions and discussions around scope, strategies to address emergent issues, reconciliation of differences and arising disputes.

Project management

- Document the process and decisions on project scope, time, cost, human resources, multiple agencies' involvement, communication, and potential risks and issues associated with the project.
- Document the considerations and decisions on program design and curriculum delivery, including a full curriculum, delivery mechanisms, recruitment strategy, evaluation and reporting plan.
- Document the learnings and observations throughout the program delivery.
- Establish recruitment strategy and selecting/scoring criteria. Document the recruitment process to demonstrate the transparency, openness and fairness of the process.

Communication with participants

- Develop and document clear guidelines to communicate with the participants and their communities regarding expectations during the program to ensure a successful program delivery and development of mutually respected working relationship.
 - Examples: attendance would affect graduation; any damage to facilities or hotel would be the responsibility of the participant or sponsoring community; two-week written notification for absence from certified training.

Moving Forward

The Environmental Monitoring Technician Training program will be piloted for a third year in 2017-18. A three-year summative evaluation will be conducted to assess program results and effectiveness. Evaluation data collected over the course of the three-year pilot through participant and instructor surveys will be used to assess the feasibility and effectiveness of the program, including its impact it has on Indigenous communities (e.g., community involvement in oil sands monitoring initiatives). Program graduates will also be surveyed one year post-program (e.g., 2015-16 graduates will be surveyed in 2016-17) to assess how the training may have contributed to increased participation in environmental monitoring in the oil sands region. Evaluation results will be used to determine if the program should be extended or expanded in future.

Acknowledgements

The success of the 2016 Environmental Monitoring Technician Training Pilot is a result of strong leadership team, continuous dedication of the project lead and supporting staff, and robust collaboration among multiple agencies.

Special thanks to Elder Carola Cunningham for providing teachings, wisdom and guidance throughout the pilot.

Special thanks to scientists and guest speakers from government departments, universities and various organizations for their support in program planning and delivery. These people play a significant role in the achievement of the training program goals. We thank them for their interest, effort and commitment to the pilot.



2016 training participants with Diane Haughland (ABMI) at Royal Alberta Museum.

8.0 Appendices

Appendix A: First Nation and Métis organizations involved in 2016-17 pilot

Appendix B: Application Form

Appendix C: Program Description

Appendix D: Recruitment Strategy

Appendix E: Pilot Program Schedule 2016-17

8.1 Appendix A: First Nations and Métis Settlements involved in 2016-17 pilot

Mikisew Cree First Nation

Fort McMurray #468 First Nation

Chipewyan Prairie Dene First Nation

Fishing Lake Métis Settlement

Kikino Métis Settlement

Horse Lake First Nation

Duncan's First Nation

*Frog Lake First Nation (participant withdrew from the program after Week 2)

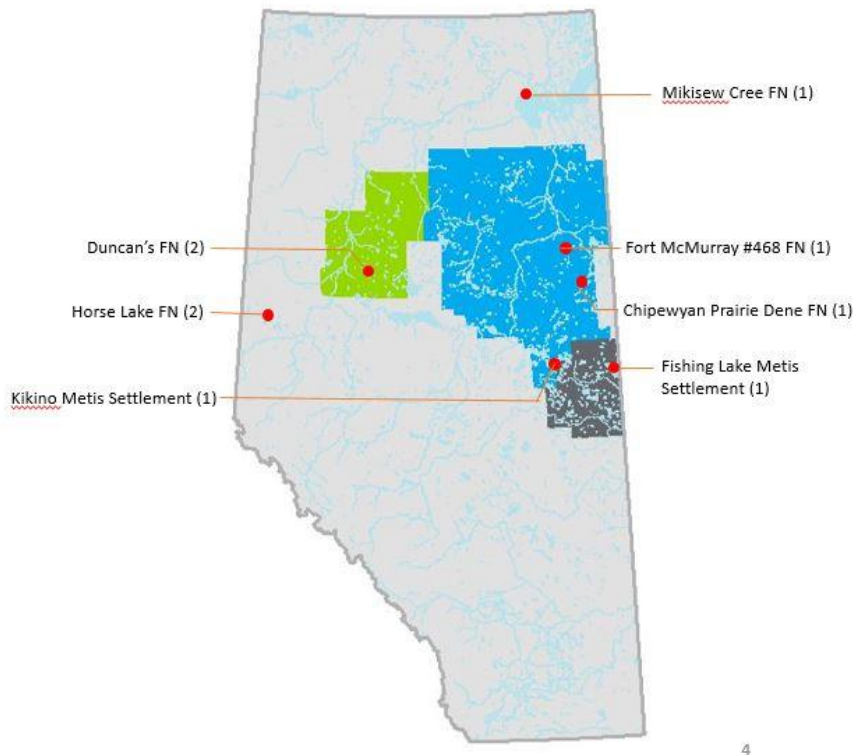


Figure 3: First Nation and Métis Settlements involved in 2016 pilot

8.2 Appendix B: Application Form

Application Form - 2016 Environmental Monitoring Technician Training Program

Name:

Address:

Telephone:

Email:

In case of emergency contact:

Date of birth:

1. Do you have a valid Alberta driver's license?
 2. Do you have basic computer literacy?
 3. Do you have basic swimming skills?
 4. Can you read and write in English?
 5. Do you have Grade 10 Math?
 6. Are you a First Nation/Métis organization community member?
If yes, which community?
-

7. Are you currently employed?
If yes, what is your job title?
What is the name of the organization you work for?
8. Can this training be applied to your current job?
9. Have you completed any type of environmental course or training (e.g., ECO Canada BEAHR program)?
If yes, which course or training?

10. Will you plan to attend the entire five-week training sessions (one week per month, August – December, 2016)?
11. Please write 1-2 paragraphs stating:
 - 1) Why you are interested in taking this training;
 - 2) How you have demonstrated interest in working in the environmental field; and
 - 3) How this training will be valuable to you in your current job and/or future career goals?
12. Please provide a letter of support to participate in this training program from your community or your employer.
13. Do you have a resume? If yes, please include a copy with your application.

Please submit this application form and supporting documents including Community/Employer support letter and resume (if available) by email or regular mail. The deadline to receive applications is **July 8, 2016 at noon (Mountain Standard Time)**.

Email: Zoey Wang, zoey.wang@aemera.org

Mail: Attention to: Zoey Wang

Alberta Environmental Monitoring, Evaluation & Reporting Agency

10th Floor, 9888 Jasper Avenue NW

Edmonton, AB T5J 5C6

If you have questions about this training program, please contact:

Zoey Wang

Alberta Environmental Monitoring, Evaluation & Reporting Agency

Tel: 780-229-7263

Email: zoey.wang@aemera.org

8.3 Appendix C: Program Description

Environmental Monitoring Technician Training: Program Description

WHAT

An Environmental Monitoring Technician Training Program for First Nations and Métis organizations in Northeastern Alberta will be offered August-December 2016. The program is funded under the approved 2016-2017 work plan for oil sands monitoring.

The goal of the Environmental Technician Training Program is to enable Indigenous Peoples' participation in environmental monitoring in the oil sands region.

The program is composed of three areas: monitoring design, delivery, and evaluation & reporting. Over the five weeks, participants will learn:

- The basics of environmental monitoring program design;
- Surface water monitoring;
- Fish health monitoring;
- Safety training in environmental monitoring; and
- Data management tools.

WHAT TO EXPECT

- Training will be a combination of classroom and field courses conducted in and around Edmonton.
- Some courses (e.g., safety) will be certifiable.
- Program costs will be provided, including lodging, meals, and course materials.
- Participants are expected to cover their travel expenses associated with this program. If cost may be a barrier to participation, please contact Zoey Wang to discuss options.
- After completing the program, hands-on training opportunities may be provided to the graduates in ongoing oil sands science and monitoring projects, such as Lake Athabasca water quality monitoring, and fish health.
- You will have an opportunity to meet and interact with community members, environmental technicians from other Indigenous communities to share experiences and learning.
- You will have an opportunity to network with environmental-related organizations and government agencies (e.g., Environment and Climate Change Canada).

REQUEST

We are seeking ten Indigenous community members from Northeastern Alberta to participate in this training program. To apply, you must be:

- 18 years or older and physically fit;
- have the support of your community or employer;

- possess a demonstrated interest in the environment;
- be able to read and write in English;
- have an Alberta driver's license;
- be computer literate;
- possess basic swimming capability; and
- have attained Grade 10 Math.

Previous environment-related training and experiences (e.g., BEAHR program) will be an asset. Preference will be given to those applicants who are already employed by their community or by an environmental service company. **Participants should be prepared to attend all training sessions unless you can provide a valid certificate for a course you have already taken.**

WHERE

Edmonton and surrounding area

WHEN

August – December, 2016 (one week out of each month)

CONTACT

To apply, please complete and return the enclosed Application Form. If you have questions about this program, please contact:

Zoey Wang

Program Coordinator

Tel: 780-229-7263

Cell: 780.668.2117

Email: zoey.wang@gov.ab.ca

8.4 Appendix D: Recruitment Strategy

I. Email/mail/fax introduction to the program and request for application

We will invite applications from 53 Indigenous communities in oil sands region, Alberta. These communities (Chief and Chair, consultation contacts, land department, band administrator and/or other contacts) will be asked to submit up to three applicants based on the training program pre-requisites we have detailed in the enclosed advertisement to communities.

Applicants will be asked to submit a complete:

- Completed application form;
- Updated resume (if applicable);
- Supporting documents (i.e., scan copy of driver's license, etc.); and
- Community/Employer support letter

and return it to Zoey Wang via mail or email by noon, July 30, 2016 (MST).

II. Follow up

Follow up calls will be made to email/mail/fax recipients from the 53 communities to:

- Confirm that communities received the invitation;
- Address questions and concerns communities might have.

III. Evaluation and recruitment

Criteria

Applicants will be evaluated using the following system:

Questions 1-6 are pre-requisites and must be answered 'yes', otherwise the applicant will not qualify.

Questions 7-10 will be given 1 point per question answered yes. Note: Question 7 and 8 will be one point, categorized as "relevant employment".

Questions 11 will be given a maximum of 3 points per question.

Question 12 will be a pre-requisite, otherwise the applicant will not qualify.

The ten applicants that fulfil the pre-requisites (questions 1-6 and 12) and score the highest points (questions 7-12) will be chosen (with a maximum of 3 individuals being considered per community).

Evaluation

By July 8, 2016, 24 applications were received. A team of five was formed to evaluate all the applications based on the criteria and other considerations.

IV. Considerations

In selection of candidates, several factors come into consideration.

- Based on application forms and assessment criteria;
- Community support;
- A balance and fair representation of multiple communities that spread out in three oil sands deposits (Cold Lake, Athabasca and Peace River). Because of the large amount of applications we received this year, we have decided to offer maximum two seats per community in the program.

8.5 Appendix E: 2016 Pilot Program Schedule

PROGRAM SCHEDULE

2016/17 Environmental Monitoring Technician Training Pilot

Week 1

Course/Activity	Instructor	Training Overview
Introduction/Orientation	Zoey Wang Environmental Monitoring and Science Division (EMSD)	<ul style="list-style-type: none"> Welcome and introduction to the program Course outline Participants and program coordination
GPS/Map reading	Trevor Wiens Apropos Information Systems	<ul style="list-style-type: none"> Participants learn how to read maps and use Global Positioning System (GPS) in environmental monitoring
Fundamentals of Design: identify key questions	Bill Donahue Environmental Monitoring and Science Division (EMSD) Kelly Munkittrick Canada's Oil Sands Innovation Alliance (COSIA)	Identify key questions in environmental monitoring program design; <ul style="list-style-type: none"> Differences and commonalities between science monitoring design and Community Based Monitoring (CBM) design Discussion
Standard First Aid with Level "C" CPR (2 days)	St. John's Ambulance	Certifiable - Canada Safety Council

Week 2

Course/Activity	Instructor	Training Overview
Swiftwater Rescue Technician (SRT 1)	Raven Rescue	Certifiable - this comprehensive Swiftwater course focuses on the safe work procedures that personnel should follow if they must enter moving water in the course of their work. The course will cover: <ul style="list-style-type: none"> Swiftwater dynamics and water-related physiology. Site safety assessment and safe working procedures. Applicable communications systems (whistles, hand signals etc.) Signs and symptoms of specific medical problems related to water accidents. Rescue and extricate an accident victim from the water. Safely swim Swiftwater so as to negotiate river hazards and obstacles at various water levels. Swiftwater rescue team organization and victim responses. Ford shallow and fast-moving water utilizing various techniques. Cross deep, slow-moving and fast-moving water utilizing basic rope systems
Wildlife camera set-up	Nina Veselka Field Coordinator, Alberta Biodiversity	Training will focus on the Alberta Biodiversity Monitoring Institute (ABMI) wildlife monitoring protocol and associated wildlife camera and Autonomous Recorder Unit (ARU) technology

	Monitoring Institute (ABMI)	<ul style="list-style-type: none"> • Topics to be covered include camera and ARU functionality and deployment in treed areas • Training will cover recent advances in wildlife monitoring technologies, specifically the move from winter snow tracking to wildlife cameras and the move from bird point counts to ARUs
Bison Backstage tour	Janelle Lane Outreach Officer, Parks Canada	<ul style="list-style-type: none"> • How the plains bison was brought back from near extinction and how its continued safety and health are ensured. • Get a fresh perspective of these 2,000-pound beasts as park staff lead you through a labyrinth of corrals, catwalks, alleys and gates, demonstrating the techniques behind the successful conservation program that conservation facilities around the world rely on to restock herds
Biology and monitoring of water	Ron Zurawell Environmental Monitoring and Science Division (EMSD)	<ul style="list-style-type: none"> • Surface water quality monitoring programs under Alberta Environment and Parks • What we monitor for (basic elements of chemical, physical and biological variables) • Invasive species and blue/green algae
Source water protection planning	Laura Machial First Nations (Alberta) Technical Services Advisory Group (TSAG)	Information session on Source Water Protection Planning (SWPP) <ul style="list-style-type: none"> • Introduction to SWPP • Data acquisition • Hands-on

Week 3

Course/Activity		Training Overview
Collision avoidance	Alberta Motoring Association	Certifiable.
Surface water quality monitoring and monitoring kit (2 days)	Chris Ware Environmental Monitoring and Science Division (EMSD)	Training will focus on: <ul style="list-style-type: none"> • The process of what to do to test water quality in a community, e.g. taking a water sample, who to contact for a potential concern or question regarding water quality. • Environmental Monitoring and Science Division (EMSD) surface water quality monitoring protocol and associated kit. Topics to be covered include: <ul style="list-style-type: none"> • Lake and reservoir protocols, • River and stream protocols, • Measurement of physico-chemical characteristics and benthic invertebrate community • General sampling considerations.
How to conduct fish monitoring	Kelly Munkittrick Canada's Oil Sands Innovation Alliance (COSIA) Mark McMaster Environment and Climate Change Canada (ECCC)	Introduce the community fish program; <ul style="list-style-type: none"> • Introduce fish species Field component: <ul style="list-style-type: none"> • Whitemud Creek • Edmonton • electrofishing demonstration
Fish monitoring, fish health	Kelly Munkittrick Canada's Oil Sands Innovation Alliance (COSIA)	<ul style="list-style-type: none"> • In class session on fish health • Tour the lab in University of Alberta

	Mark McMaster Environment and Climate Change Canada (ECCC)	
--	--	--

Week 4

Course/Activity		Training Overview
Data management tools	Amanda Doyle First Nations (Alberta) Technical Services Advisory Group (TSAG)	Introduction to data management <ul style="list-style-type: none"> • What data is • Demonstration of some data management tools • Mobile collection • Hands-on (computer lab with internet access)
Reporting: communication tool, data visualization	Tara Narwani & Joelle Chille Cale Alberta Biodiversity Monitoring Institute (ABMI)	Participants learn how to present science data in an understandable manner. <ul style="list-style-type: none"> • Essentials of reporting • Introduction of communication tools: NatureLynx
Alberta Energy Regulator information session 101	Sara Cook Alberta Energy Regulator	<ul style="list-style-type: none"> • Mandate, roles and responsibilities of Alberta Energy Regulator (AER) • Integrated Compliance Assurance Framework • Inspections-Proactive & Reactive • Incident Response
Traditional Ecological Knowledge (TEK), local knowledge, environmental observations: Challenges and opportunities	Dave Natcher University of Saskatchewan	Scientists and trainees learn challenges and opportunities to incorporate traditional ecological knowledge and local environmental observations in monitoring.
Defensive driving	Fleet Safety International	Certifiable.
GIS: Snapshot	Tracy Howlett Environmental Monitoring and Science Division (EMSD)	<ul style="list-style-type: none"> • Overview on Geographic Information System (GIS) • Introduction on resources and courses participants can look into

Week 5

Course/Activity		Training Overview
Wildlife programs	Simon Slater Environmental Monitoring and Science Division (EMSD)	<ul style="list-style-type: none"> • Share information on wildlife programs
Processing center tour	Diane Haughland & Varina Chrisfield Alberta Biodiversity Monitoring Institute (ABMI)	<ul style="list-style-type: none"> • Tour to Alberta Biodiversity Monitoring Institute (ABMI) Processing Center, identify plants of interest
Ice Safety & Rescue – Technician (2 days) (Note: Swiftwater Rescue Technician, SRT 1 certification is a pre-requisite for the ice safety and rescue course)	Raven Rescue	Certifiable. This course is comprehensive training for those who work or travel on ice over lakes, ponds, and reservoirs, or rivers that are completely frozen over. The curriculum includes:3 <ul style="list-style-type: none"> • Formation of ice and the factors that influence its decay • How to determine ice thickness • Identification of hazards • Travelling on ice

		<ul style="list-style-type: none"> • Self-rescue and a range of options for the rescue of others - including single rescuer techniques for field personnel that work in pairs <p>The curriculum also includes the medical complications posed by cold water immersion and hypothermia, and the significant implications for rescue and transport.</p>
<p>Workshop: Design a community-based monitoring program</p>	<p>Karin Smith-Fargey, Tracy Howlett, Ron Zurawell & Zoey Wang Environmental Monitoring and Science Division (EMSD)</p> <p>Kelly Munkittrick Canada's Oil Sands Innovation Alliance (COSIA)</p>	<ul style="list-style-type: none"> • Overview on program design, delivery, and evaluation – concepts, methods and tools • Recap concepts on monitoring program design • Community Based Monitoring approach introduction • Workshop on Community Based Monitoring program design