



Lakeland Industry and Community Association

8237, 5107W - 50 Street, Bonnyville, AB T9N 2J5

☎ 780 812-2182 📠 780 812-2186 🌐 www.lica.ca

Acid Deposition Monitoring Program Expansion Committee Meeting Minutes Tuesday, April 4, 2023 9:00 a.m. – 12:00 p.m. LICA Boardroom and via Microsoft Teams

Present: Brent McGarry
Leo Paquin
Andrea Woods
Jennifer O'Brien
Salim Abboud
Kevin Glowa (Arrived 9:24 a.m.)
Wally Qiu
Heather Harms (Arrived 9:15 a.m.)
Desiree Parenteau
Clarence Makowecki
Greg Wentworth
Amanda Avery Bibo
Fin MacDermid

Observers and Guests: Sunal Ojha

Staff and Contractors: Kristina Morris, LICA Executive Director
Michael Bisaga, LICA Manager, Env. Monitoring Programs
Eveline Hartog, LICA Administrative Professional

Regrets: Lily Lin, LICA Data and Reporting Specialist

1.0 **CALL TO ORDER**

Leo Paquin, Committee Chair, called the meeting to order at 9:03 a.m.

1.1 **Territorial Acknowledgement**

1.2 **Introductions**

1.3 **Vision, Mission, and Values**

1.4 Roll Call

1.5 Approval of Agenda

1.5.1 April 4, 2023, ADMPEC Agenda

#1 Moved by Desiree Parenteau AND CARRIED that the April 4, 2023, ADMPEC Agenda be approved as presented.

1.6 Approval of the Minutes

1.6.1 November 29, 2022, ADMPEC Meeting

#2 Moved by Jennifer O'Brien AND CARRIED that the November 29, 2022, ADMPEC Minutes be approved as presented.

2.0. ONGOING BUSINESS

2.1.1 Soil Acidification Monitoring Program

2.1.1.1 Cold Lake Long Term Soil Acidification Monitoring Site Report (LTSAM)

The Manager of Environmental Monitoring Programs briefly reviewed the report which had been distributed with the agenda package for the Committee's information. The report is for the samples collected from the Cold Lake LTSAM site in Fall 2021. Overall, the data suggest that some acidification may be occurring; a similar pattern is also being observed at the Tucker Lake site although there is less data to support that. Assessment of these trends requires ongoing, routine monitoring over long periods, which is part of the design of the LICA and LTSAM soil monitoring program. LICA's long-term commitment to surveillance of soil acidification parameters (soil attributes that can be directly affected by ongoing acidic inputs) is needed since changes in soil chemistry may affect other components of the ecosystem. He, along with Dr. Salim Abboud, will present the Committee with an in-depth presentation of the findings at a future meeting after completing additional analysis of the data.

2.1.1.2 Moose Lake Sampling Status

The Manager of Environmental Monitoring Programs updated the Committee regarding the sampling work done at Moose Lake in October 2022. The analytical work was completed in December and January with the final report being reviewed and finalized. Preliminary analysis of the data indicates that this site does not show any pattern of soil acidification.

A Committee member inquired if LICA would be interested in presenting their in-depth presentation to the OSM Air Technical Advisory Committee. The Manager of Environmental Monitoring Programs indicated that he and Dr. Abboud would certainly be prepared to do so this summer.

2.1.1.3 New Soil Monitoring Site Selection Outputs

LICA's Manager of Environmental Monitoring Programs indicated that he had been working with Dr. Abboud to identify a new soil acidification monitoring site. LICA's current sites are located on the periphery of the high deposition zone; this was raised as a concern when drafting LICA's Acid Deposition Monitoring Strategy for the Cold Lake Region. To address this, LICA's new monitoring site should be in an area where models predicted the highest regional deposition. A number of data sources were used in a geospatial analysis site selection scoping exercise to determine a location for the new soil acidification monitoring site. The data inputs for the scoping exercise included the following:

Base Map

This map shows the LICA boundary and its air monitoring zone with markers showing both air monitoring stations and soil monitoring sites.

GEM-MACH Model Output Map

The dark blue shading in this map indicates areas of high deposition, specifically Sulphur, while the lighter shades of green and yellow indicate areas of lower deposition. The two existing LICA sites are on the periphery of predicted high deposition, so areas within the dark blue zones were targeted as areas for the potential new monitoring site.

Soil Classification Map

This map was used to identify suitable soils for monitoring within the area of high deposition. The province had put in effort in the 70's and 80's to classify and map soils in the province. This historical data was digitized for LICA and soil characteristics are embedded in the polygons within the soil classification map. This map was then superimposed over the GEM-MACH model output map which assisted in narrowing down areas to consider for the new site. The area outlined in red was identified as having soil suitable for acid deposition monitoring and consists of 30% Nicot soil which is a sandy loam and is considered a nutrient poor soil; this is a good soil for monitoring since it shows signs of acidification early as opposed to other, well-buffered soil types.

The Manager of Environmental Monitoring Programs also indicated that the soil classification map would be a good data contribution that LICA could make to an oil sands data portal since the soil types have been digitized.

2019 ABMI Human Footprint Map

The Alberta Biodiversity Monitoring Institute map has an enhanced oilsands region data set and was used as a tool to buffer out zones within the areas of higher deposition that should not be considered suitable for monitoring. This map and data set offered information about well pads, cutlines, processing facilities cultivated land and agriculture within the area being considered for monitoring. Buffers were applied around the human footprint (500m around transportation corridors, 50m around all other footprint types) which helped narrow the search area to locations that have not been disturbed by human development.

Alberta Vegetation Inventory Map

The vegetation inventory map primarily shows the area covered by crown land and leased crown land. The presented map was filtered to show the location of jack pine in dry and dry-mesic moisture regimes which are both good indicators of sandy soil. The human footprint buffer (described previously) was applied to the jack pine stands to further narrow the search area.

Satellite Imagery Map

Field investigations have not yet begun since the area is still covered in snow but remote ground truthing was done using satellite imagery. The satellite imagery was used to confirm the location of jack pine stands (typically indicated by trees in low-density stands because of nutrient deficient sandy soils). Core samples will be taken in June or July to determine if the soil meets monitoring criteria.

There will be challenges with establishing a site in this area because it is an active area and the future development plans are unknown, in addition, access to the site is also an unknown factor.

A Committee member inquired who the leaseholders are in the area identified in the scoping exercise; an Industry member indicated that Imperial Oil is the likely leaseholder. He further indicated that he would contact and assist the Manager of Environmental Monitoring Programs regarding the long-term plans for this suggested site. It was also suggested that when the legends are added into the maps, township and range gridlines should also be included. A committee member suggested that the Manager of Environmental Monitoring Programs consult indigenous groups about this process since the locations identified for sampling are in traditional harvesting areas.

The Committee was informed that once all the legends are exported into the maps, the series of slides/maps will be sent out to the Committee.

#3 Moved by Andrea Woods AND CARRIED that LICA accept that the area that is identified in the presentation is suitable to pursue in establishing an additional soil monitoring site to support the work of the acid deposition monitoring strategy. Contingent on confirmation with Imperial Oil's future development plan and consultation with Indigenous communities regarding the site selection process.

2.1.2 Acid Sensitive Lake Sampling Program Update

The Manager of Environmental Monitoring Programs updated the Committee regarding acid sensitive lake sampling indicating that four lakes were identified as being acid sensitive and that these lakes were sampled in the Fall of 2022. This report on the data collected is expected to be published in April 2023.

The scope of work for acid sensitive lakes was changed in the new year to include the critical loads for these lakes, along with the inclusion of the Alberta Lake Management Society (ALMS) series of data. This added information will give a complete set of data that would support ongoing determination of chemistry changes in local lakes.

3.0 OTHER BUSINESS

3.1.1 Update on Monitoring Plan Implementation

3.1.1.1 Passive Monitoring Program Enhancement

The Manager of Environmental Monitoring Programs informed the Committee that partial-year data was added to the annual report to Alberta Environment and Protected Areas.

3.1.1.2 Wet Deposition Samplers, NADP Laboratory

The Manager of Environmental Monitoring Programs indicated to the Committee that the samplers are scheduled to be shipped on April 14, 2023. He is currently establishing a subscription service with the Wisconsin State University NADP laboratory to analyze our samples.

3.1.1.3 Upgraded Precipitation Gauges

The Committee was informed that the gauges are due to be shipped on April 10, 2023, and that the gauges were upgraded to conform with NADP protocols.

3.1.1.4 Ion Exchange Resin Sites, WBEA Laboratory

The Manager of Environmental Monitoring Programs pointed out to the Committee that once bench testing has been completed the ion resin equipment will be deployed in May and June 2023, with additional resins being deployed in the fall.

The Committee was informed that LICA is looking for off-site storage for its current soil samples which are currently stored by EPA. Having custody and access to these samples was important should the need arise to re-examine some soil samples.

3.1.1.5 Denuder Samplers, WBEA Laboratory

The Committee was informed that the denuder samplers most likely would not be arriving until August 2023. The supplier of the equipment will provide LICA with preliminary training on April 17.

4.0 ACTION LIST

4.1 Follow-up on Action List

4.1.1 Action List for November 29, 2022, ADMPEC Meeting

The Committee reviewed the action list from the November 29, 2022, meeting, noting that all items on the current list are still in progress and that item *5.1.5 LICA to receive training by WBEA in the use of the denuders and collection of data* be removed from the list.

5.0 UPCOMING MEETING DATES

5.1 Board Meeting – April 27, 2023

5.2 Next ADMPEC Meeting

The Committee agreed that a Poll would be sent out in June 2023, to set a date for a meeting in the second half of July 2023.

5.2 Bonnyville Oil and Gas Show June 21 & 22, 2023

6.0 ADJOURNMENT

The meeting adjourned at 10:19 a.m.

#4 Moved by Kevin Glowa AND CARRIED that the meeting be adjourned.

Approved on: _____
Date

Signature