**Emerald EFW Public Liaison Committee Meeting**

**Wednesday March 22nd 2023**

 **File No. PO03222023**

**Attendees:**

**Chair:** -----

**Emerald Energy:** Joe Lyng, Keith Nichol, Jeremy Pappain, Shannon Murphy

**Committee Members:** Don Constable (remote)

**Guests:** Helen Kearney, Peter Kearney

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| **Item** | **Topic** | **Action** |
| **1** | **Review of Minutes**Because the extended period since the last meeting (held before the COVID-19 shutdowns) the minutes from the May 2019 meeting were not reviewed |  |
| **2** | 1. **Operations Update**

Joe presented the operations report for 2020, 2021 & 2022 (attached)Ms. Kearney asked what we do with the waste that we can’t incinerate (unacceptable waste/UNA) and if it is a size issue or composition issue as to why we cannot burn it. Joe: UNA gets sent to a landfill disposal. It is mostly an issue over size (too big for the incinerator) but there are some materials that aren’t optimal for our incinerators. (long stringy materials, pieces of metal).Ms. Kearney - What portion of the waste we receive is commercial waste – the concern being commercial waste emits more harmful particles in the air.Joe: It varies – 2022 was 57% commercial waste and in 2020 it was 52% but it typically ranges between 45% - 55%Jeremy: Clarified that the commercial waste we receive is non-hazardous, we do not receive any hazardous waste and do not plan to receive any in the future.Mr. Kearney asked how we check for Polychlorinated Dioxins in the waste.Jeremy: We get analytics for industrial waste streams before anything gets delivered. Much of the waste we receive are packaging and plant trash which are not analyzed in the same way. The handling of hazardous industrial waste is strictly monitored by the MECP and any company that creates hazardous waste is required to have it registered & shipped via a designated manifest system. Mr. Kearney asked who measures the emissions from the stack.Joe: An independent engineering consultant is hired to perform the monitoring. GHD conducted the monitoring until 2021, Ortech took over in 2022. Jeremy: The monitoring program is regulated and monitored by the MECP. Ms. Kearney asked where the samples are taken; is it within a certain radius?Joe: The samples are taken right out of the stack. We have a platform 3 quarters up our stack they insert their probe and extract the gases.Mr. Kearney asked if you are not processing waste that is toxic, why would Polychlorinated Dioxins show up in the test results?Joe: Some form in the combustion process but are usually destroyed in the process. Others can for after the combustion process through chemical reactions of metal chlorides in the baghouse (referred to as a de novo pathway).Mr. Kearney asked if the formation has anything to do with the combustion control or temperature variance.Joe: If the retention temperature in process drops below 1000° C we may not get 100% destruction and some dioxins can carry over. We have a requirement to maintain 1000° C and a gas burner to maintain that temperature. The furnaces are continuously monitored for the retention temperature.Ms. Kearney asked how much we expect this standard to change if we receive more waste. Joe: We do not expect the standard to change but if it did, it would have to get better results. |  |

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|  | 1. **New Projects**

Joe informed the committee about past & upcoming projects:New Turbine – Sept 2021We installed a new turbine to increase the portion of EFW steam we send to Cascades. We expect to reduce the volume of natural gas we use by 4M m3 annually.Steam Line Replacement – 2022 to 2024We are in the process of replacing the steam line along Bramalea Rd. The biggest challenge will be crossing Bramalea Rd as the line must be below all other services. We expect to replace the road crossing this year, and the other sections of the line over the following 2 or 3 yearsAPC Residue Recycling ProgramWe have been working with McGill University for the last 6-7 years to use our APC Residue as a concrete additive. Results are favourable, showing about 10% more strength than regular concrete. We did a field trial onsite by pouring a sidewalk on the north side of the property. We are looking to do a commercial pilot in 2023. If successful, our APC residue could displace up to 10% of the cement used in ready mix concrete.Ammonia Safety ProgramWe store anhydrous ammonia onsite in a tank as part of our NOx emissions control system. Our selective catalytic reactor uses ammonia to break down NOx into nitrogen and water. The tank has been in place since 2000 and is regularly inspected in accordance with the TSSA and Environment Canada regulations. We are required by Environment Canada to have an E2 (Environment Emergency Plan) which includes notifying the fire department and the community.  |  |
| **3.** | 1. **New Business**

Redevelopment ProjectWe have the final work plans for the technical experts studying the environment as part of our Environmental Assessment Screening process. While the work plans are marked as ‘final’, they will be adjusted if anything that comes up during the studies.The only workplan that needs development is the air monitoring program. We are working on the locations for the confirmatory air sampling; we are hoping to use the same locations as those used by the Region in 2014 to build upon that database. The supplemental sampling will establish background air quality and determine if anything has changed significantly in the past few years. The EFW process design brief has been completed. The engineer identified mass burn technology as the most suitable technology for what we are looking to do. It is the most proven, consistent, and controllable technology on the market. Mr. & Ms. Kearney asked if the stack height would be a problem given the proximity to the airport.Joe: That question will be answered through the modeling portion of the work plan. Stack height disperses contaminants over a larger area; a shorter stack means the contaminant emissions would need to be lower. In the 80’s the initial solution to the acid rain issues in northern Ontario was to build a higher stack but all that did was move the problem further away. Mr. Kearney asked if the lower stack would do anything to affect the process?Joe: No, the stack height doesn’t affect the process. It would affect the design of the emission control systems to ensure it would be appropriate with a lower stack. It may be harder to comply to the emission criteria with a lower stack – that will be what we have to work toward. Space limitations of the site will mean that we will have to move our ash processing offsite. With more space, we could develop products from our ash like roadbed. The goal is to divert ash from landfill disposal.The energy products we are looking to develop are Steam (to Cascades), Electricity (to the grid), District Heating and Hydrogen (to the community). In Copenhagen, the district heating system runs for 50km. Denmark gets 35–40% of their heat from their district heating system.Ms. Kearney asked if we had partners on board that will buy into district heating.Joe: No, we could not develop this technology on our own – we would need partners including significant government commitments.Ms. Kearney asked what is the next steps in the approval for the expansion?Joe: We need to do the technical studies. The engineers are starting to collect all the data and do their analysis. We’re expecting them to be done sometime in June and we will have another open house to present the result of the studies. We will then take the summer to finish off any work that may be outstanding.We will hold a 3rd Open House in late June to present the initial findings of the studies and a 4th Open House in the fall to answer any questions that come up. We expect to file the draft report with the government, hopefully by the end of this year and the final report in early 2024. Mr. Kearney asked when we think the shovels will be in the ground.Joe: Optimistically, late 2024 |  |
| **4** | 1. **Next Meeting**

June 2023 – The final date to be determined. |  |
| **5** | 1. **Adjourn**

The meeting adjourned at 6:30 pm. |  |

**Minutes taken by: Shannon Murphy**

**Emerald Energy from Waste.**