Delegation to Works Committee
November 6th, 2024

W. Bracken

Durham Report #2024-WR-7

Re: "Response to Questions Raised by Municipality of Clarington Council in Correspondence Received at the June 5, 2024 Works Committee Meeting"

Report #2024-WR-7 :

Inadequate and Missing Key Information; Fails to Acknowledge and Address Identified Problems with the 160,000 Proposal and ESR

- **Fundamental flaws in ESR remain unacknowledged, unaddressed**, including AQIA and failure to assess mass loading
- **Health review is inadequate/flawed**, inappropriately scoped and fails to consider critical information, and contains errors
- **Failure to address totality of facts around DYEC operational history around Dioxin/Furan emissions and monitoring** which point to need for precautionary approach, more monitoring
- **Complete failure to fulfill obligations to Clarington on reviewing available monitoring and emissions control technologies** employed in the EU and elsewhere; DYEC would not meet their standards

Staff Responses (below) leads one to believe the HHERA was reviewed and that they responded to all submitted concerns in their responses. This not true. And staff write: "***Based on the Region's response**, the MECP determined that elevation to a full Environmental Assessment was not required*".

3.2 Provide an updated summary of potential environmental/ecological impacts using the most recent data.

a. A series of studies and reports were completed as part of the original Environmental Assessment. These studies were reviewed to assess the impacts of a 20,000 tonne increase in waste throughput. The reviewed studies included surface and stormwater, groundwater, land use, noise, stack emissions, ambient air, greenhouse gas emissions, the natural environment, socioeconomic impacts, traffic, visual effects, and heritage and culture. The study review concluded no significant impacts from the tonnage increase. The MECP reviewed a similar request from Clarington

Council (and the delegations) requesting elevation. The Region has responded to concerns raised to the satisfaction of the MECP. The MECP concluded following a review of the submissions that there was no requirement for the Region to further update existing or conduct additional studies.

3.6 Provide a summary of how the comments and concerns submitted by the Municipality of Clarington and the public were addressed in the Environmental Assessment screening process and how and when any unresolved issues would be addressed.

a. The elevation requests were based on a series of questions from stakeholders with concerns primarily in the areas of air emissions control technology and emissions modelling, the environmental monitoring conducted by the Region, and the Site-Specific Human Health and Ecological Risk Assessment. At the MECP's request, the Region compiled all stakeholder questions into a table and provided a response to each question. Based on the Region's response, the MECP determined that elevation to a full Environmental Assessment was not required.

b. Summaries of the Region's response to stakeholder questions are found in Table A, Proponent Response to Elevation Request, and were considered by the MECP in not granting the request for project elevation.

Fundamental flaws in ESR remain unacknowledged, unaddressed:
Failure to assess increased mass loading

- **Regions failed to assess potential adverse health and ecological impacts of burning up an additional 20,000 tonnes per year for an unspecified number of years.**
- did NOT check off effects to land, ecosystems, public health as being potentially negatively impacted by the increasing capacity by 20,000 tonnes per year – they **DID NOT ASSESS INCREASED MASS LOADING**
- **Only checked off impact to air as potential problem**
- **did not consider the impacts to land and on human health via multiple pathways, including through food**, though there were a numerous potential issues/concerns identified in the 2009 EA risk assessment
- **did NOT list the *Site Specific Human Health and Ecological Risk Assessment* (HHERA) as a study they considered when reviewing potential health, land, water, environment** (Section 3.11, page 68)
- The Ministry reviewers, including their Human Health Toxicologists identified concerns at the time of the EA and their Regulatory Toxicologist advised that a new environmental study would be required if ***any*** expansion is required in the future (emphasis added)

Numerous Problems With Intrinsik Report

- Acknowledges the ESR, *"Other than Criteria 6.11 … Health is not specifically addressed in the ESR"* But ESR 6.11 mischaracterizes EA results (multiple examples in my attached submissions), f
- Major flaw with Intrinsik review is their incorrect assumption stated below:

  *"**Rather the ESR focuses on Air Quality impacts** as a surrogate for health (i.e., if air quality is not negatively impacted then health will not be negatively impacted). **Since air quality has the largest potential impact on health**, there is merit to such an approach."*

This is simply not true for all pollutants, and especially for some of the pollutants of most concern with incinerators, including dioxins/furans whose major risk pathway is through exposure through food, not through inhalation.

- Intrinsik relies heavily on the AQIA, limits some evaluations to specific years, makes broad unsupportable conclusion using d/f congeners analysis that is based on a meaningless comparison (ambient air sampling, stack tests conducted at different times over different operating conditions) over a "brief" (one year) time period using stack test data collected during optimal steady-state operations

Copes' Review acknowledges conclusion "***relies heavily on the results of the air dispersion modelling which predicts no increase***" (Below extract taken from 2024- WR-7, page 12)

Dr. Ray Copes

Dr. Ray Copes, former Chief, Environmental and Occupational Health, Public Health Ontario, was asked to review the Intrinsik memo and to comment on potential health impacts of the expansion, if any (2nd attachment). The following are his main findings:

- Dr. Copes concurs with Intrinsik's conclusion that the expansion in capacity is not likely to result in adverse effects on human health. This conclusion relies heavily on the results of the air dispersion modelling which predicts no increase, and in many cases a decrease, in ambient air concentrations of pollutants from the DYEC.

Fundamental flaws in Air Quality Assessment remain unacknowledged, unaddressed

The “eyebrow raising” AQIA Conclusion:

> *“Overall, the results of the modelling assessment indicate that the* ***160,000 tpa would result in a small overall decrease in the maximum predicted concentration for all contaminants*** *and the change in cumulative concentrations would be even less significant.* ***The decrease is attributed to increased stack gas temperature and flowrate which improve the dispersion characteristics of the facility****.”*[20]

AQIA Conclusions Based on Unfair Apples-to-Oranges 140k to 160 k Comparison

AQIA **Mixed and Matched Theoretical and Operational Data, from different years, to *create* an artificial 140,000 TPA Scenario,** thereby artificially inflating 140,000 TPA concentrations when they **should have used *actual* 140,000 TPA operational data**

TABLE 1: Data Sources For 140,000 TPA and 160,000 TPA Scenarios

STACK PARAMETER	"140,000 TPA" Scenario Represented in 2021 AQIA	160,000 TPA Scenario Represented in 2021 AQIA
Volumetric Flow Rate	2011 ESDM (110% MCR) Theoretical	2018 SOURCE TEST (100% MCR), pro-rated
Exhaust Temperature	2011 ESDM (110% MCR) Theoretical	Contradictory information – SOURCE TEST (Ortech, 2021) as stated in AQIA or MANUFACTURER'S DOCUMENTATION provided by Covanta (Regions' March 11th letter to Clarington)?
Stack Concentrations	2020 SOURCE TEST (100% MCR) or stack emission limits or other emission factors	2020 SOURCE TEST (100% MCR) or stack emission limits or other emission factors

Failure to address totality of facts around DYEC operational history around Dioxin/Furan emissions and monitoring

which point to need for precautionary approach, more monitoring

- Clarington and public made multiple requests for necessary AMESA data and underlying reports but Region unacceptably continues to deny these reasonable requests and there is a great deal of withheld/invalidated data
- How can the Host Community, Regional Councillors and Advisory Committees do their jobs without it?!

For such an extremely toxic pollutant like dioxins, that bio-accumulate and which cause adverse health effects at extremely small exposures, we simply cannot rely on spring and fall 12-hour dioxin test conducted at optimal conditions to predict public safety, especially when we know these facts:

1) there have been multiple dioxins exceedances at the DYEC (2015 and 2016),
2) there was an ambient air exceedance for dioxins in 2018, on a very calm wind day, at the ambient air monitor nearest to the DYEC (ambient air testing is only done 1 out of every 24 days so about 4% of the time)
3) that, to our knowledge, this facility has NOT been source tested at Other-Than-Normal-Operating Conditions (OTNOC) including start-ups and shutdowns, though this facility has experienced numerous shut- downs and upset conditions
4) and they are not required to do such testing though it well known that dioxin emissions can be much higher (up to 1000 times) during OTNOC; Europe now requires incinerators to stack test during OTNOC.
5) that the most recent Soils Testing Report (soil testing only conducted once every 3 years now) shows dioxin concentration at downwind site is more than double pre-DYEC level and is above what was predicted in the EA
6) that even DURING those very short 4-hour-long dioxin source tests (there are three 4-hour tests totalling 12-hours) there have been operational issues and that at least one test has been pieced together, stopping dioxin collection during period of operational issues.

Examples where DYEC does not meet the European BAT requirements include highlighted sections below: Note the first five columns are excerpts from the BAT Conclusions (see pages 14, 15 of 51 paged document). The stand-alone column on the right was created to show how current monitoring at the DYEC is different for these pollutants. Definitions for Dust and other pollutants are taken directly from the BAT conclusions.

Substance/ Parameter	Process	Standard(s) (4)	Minimum monitoring frequency (5)	Monitoring associated with	DYEC Monitoring
Dust (defined as Total particulate matter (in air))	Bottom ash treatment	EN 13284-1	Once every year	BAT 26	Durham does NOT continuously monitor Particulate Matter (instead uses crude substitute Opacity)
	Incineration of waste	Generic EN standards and EN 13284-2	Continuous	BAT 25	
Hg	Incineration of waste	Generic EN standards and EN 14884	Continuous (8)	BAT 31	DYEC does NOT continuously monitor Mercury instead has two stack tests totaling 18 hours/yr)
TVOC	Incineration of waste	Generic EN standards	Continuous	BAT 30	No continuous monitoring of Total Volatile Organic Compounds; DYEC monitors organic matter
PBDD/F	Incineration of waste (9)	No EN standard available	Once every six months	BAT 30	Polybrominated dioxins/furans are NOT monitored at the DYEC at all

Substance/ Parameter	Process	Standard(s) (4)	Minimum monitoring frequency (5)	Monitoring associated with
PCDD/F (Chlorinated Dioxins/Furans)	Incineration of waste	EN 1948-1, EN 1948-2, EN 1948-3	Once every six months for short-term sampling	BAT 30
		No EN standard available for long-term sampling. EN 1948-2, EN 1948-3	Once every month for long-term sampling (10)	BAT 30
Dioxin-like PCBs	Incineration of waste	EN 1948-1, EN 1948-2, EN 1948-4	Once every six months for short-term sampling (11)	BAT 30
		No EN standard available for long-term sampling. EN 1948-2, EN 1948-4	Once every month for long-term sampling (10) (11)	BAT 30

DYEC Monitoring
Durham needs to check if reference standards used in Durham are as stringent as Europe including sampling and recovery procedures during source tests.
To my knowledge, judging what was provided in Durham 2021-WR-10, the DYEC does NOT include monitoring of dioxin-like PCBs in using long-term sampling. Only chlorinated Dioxins and Furans are collected/analyzed.

Comparing stack results against outdated emission limits does not protect us. Your Committee needs a full report comparing our requirements against the BAT-AELs.

It is notable as well that the BAT Conclusions also set BAT-AELs for long-term sampling of dioxins and furans. Here I have copied the table directly from the document.

BAT-associated emission levels (BAT-AELs) for channelled emissions to air of TVOC, PCDD/F and dioxin-like PCBs from the incineration of waste

Parameter	Unit	BAT-AEL		Averaging period
		New plant	Existing plant	
TVOC	mg/Nm³	< 3–10	< 3–10	Daily average
PCDD/F ([29])	ng I-TEQ/Nm³	< 0,01–0,04	< 0,01–0,06	Average over the sampling period
		< 0,01–0,06	< 0,01–0,08	Long-term sampling period ([30])
PCDD/F + dioxin-like PCBs ([29])	ng WHO-TEQ/Nm³	< 0,01–0,06	< 0,01–0,08	Average over the sampling period
		< 0,01–0,08	< 0,01–0,1	Long-term sampling period ([30])