

Alternative Low Carbon Fuel Use at St Marys Cement Bowmanville Plant Public Meeting / Open House #2 - Comment Form

We welcome your comments on the proposed application for expanded use of Alternative Low Carbon Fuels at the St Marys Cement Bowmanville Plant. We are collecting this information to help us understand and address your views.

Do you have any comments about the proposed application?

THESE ALTERNATIVE FUEL SEEM BETTER THAN COAL
HOWEVER I AM STILL CONCERNED ABOUT BURNING PLASTICS

Do you have questions that you would like answered by our team?

Please turn over



If you would like a response to any of your questions from the Project Team, please leave your contact details below and we will get back to you as soon as possible.

Name / Organization:	
Email:	
Phone:	
Address:	

Thank you for taking the time to fill out this comment form. If you require more time, you are welcome to take the form home and send it to:

Ruben Plaza
St. Marys Cement,
Corporate Environmental Manager,
North America
Phone: 905-623-3341 extension 242
E-mail: ruben.plaza@vcimentos.com

Sarah Schmied
Golder Associates Ltd.
Project Manager,
Environmental Assessment Specialist
Phone: 416-366-6999 extension 2211
E-mail: sarah_schmied@golder.com

Please send your comment forms by **Monday January 20, 2020.**

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Do you have any other comments?

How ABOUT PLANTING A SMALL MIXED FOREST AROUND
TO PLANT TO HELP OFFSET CARBON EMISSIONS.
IT IS ALL THE RAGE THESE DAYS.

Please send your comment forms by **Monday January 20, 2020.**

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Do you have any comments about the proposed application?

WE ARE STILL CONCERNED RE: THE CUMULATIVE EFFECTS OF THE VARIOUS PLANTS PARTICULARLY SINCE THE DURHAM ENERGY COMPLEX WILL BE INCREASING ITS INTAKE OF GARBAGE MATERIAL AS WELL. WE DO APPROVE OF USING THE FUEL YOU SUGGEST.

Do you have questions that you would like answered by our team?

- ① I WOULD LIKE TO SEE BETTER MONITORING FACILITIES EAST OF ST. MARY'S PLANT. THE DURHAM ENERGY PLANT MONITORING FOCUSES ON AREAS WEST (I.E. COURTYARD) PLEASE COULD YOU LET US KNOW ~~IF~~ WHETHER YOU INTEND TO INCREASE MONITORING TO THE EAST
- ② - WHAT PLANTS / INDUSTRY WILL BE PROVIDING YOUR FUEL?
THANKS

Please turn over



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Do you have any comments about the proposed application?

I would like to see all of the data before commenting

Do you have questions that you would like answered by our team?

Please turn over



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Do you have any other comments?

I would like a copy of the draft Reports Please!

Thank you for the presentation!

Please send your comment forms by **Monday January 20, 2020.**

October 14, 2019.

Via email to: ruben.plaza@vcimentos.com and Sarah_schmied@golder.com

Mr. Ruben Plaza
St. Marys Cement
Corporate Environmental Manager, North America

And

Sarah Schmied
Golder Associates Ltd.
Project Manager
Environmental Assessment Specialist

Dear Mr. Plaza and Ms. Schmied:

First, I wish to thank Mr. Plaza for granting my extension request. Notwithstanding that extension, my time to prepare comments has been severely constrained. At this time I can only provide a brief overview of some of my concerns.

Second, upon re-reading my submission to the EBR 012-1559 posting from February 2015 (pasted in below) many of the concerns I relayed at that time, remain.

An overriding concern that remains that St. Marys (SM) will be “processing” waste materials without also being required to undertake an Environmental Assessment study and it’s not clear to me what amendments to your ECA would be required at this time, this though you may be “processing” waste close to the maximum amount the Durham York Energy Centre (DYEC) is currently processing, i.e. 140,000 tonnes per year. Though very much imperfect processes, at least the DYEC went through an individual EA and a somewhat speedy ECA.

Without access to complete testing data, assertions about matters ranging from fuel quality and emissions are impossible to assess.

Without a defined Waste Service Area and a description of the full range of materials to be processed, it’s impossible to assess the materials composition.

What is also troubling is that some of the post-consumer waste SM might process, should not be produced at all if it’s not recyclable. Essentially, the industry producing those non-recyclable tinted bottles (assuming that claim is true), is able to offload their disposal problem to SM (and our air shed) in a manner that may be profitable for both companies, rather than change their business practices and

ceasing production of non-recyclable products. This impedes the road to a sustainable economy and waste reduction efforts.

Without materials inventory/composition analysis, how could Golder (or other) produce an emissions inventory, which would be required to assess potential impact of air emissions, which in turn would be needed to determine what type of air pollution control technology would be most suitable to address a different emissions profile.

Without knowing the foregoing, it would be most challenging to propose a sufficiently comprehensive monitoring program. – one that should increase the number of parameters to be monitored given the ALCF, with increased frequency of stack testing and a more comprehensive ambient air monitoring program.

E.g. the Durham York Energy Centre (DYEC) was required to do one regulatory source test annually. Citizens persuaded Durham Council to do an additional stack test, so called “voluntary” source test and it continues to this day.

To be a good corporate citizen, SM should consider increasing ST frequency to at least two per year.

Ontario A-7 Guideline

<https://www.ontario.ca/page/guideline-7-air-pollution-control-design-and-operation-guidelines-municipal-waste-thermal>

Table 2: In-Stack emission limits for cement and lime kilns

Parameter	In-Stack Emission Limit	Verification of Compliance <small>footnote: 2(2)</small>
particulate matter (PM)	50 mg/Rm ³ or a site specific emission limit where a more stringent stack concentration limit is already in place for existing raw materials and conventional fuels (1)	Results from compliance source testing or calculated as the rolling arithmetic average of four (4) hours of data measured by a continuous emission monitoring system that provides data least once every fifteen minutes
cadmium (Cd)	7 µg/Rm ³ unless existing raw materials and conventional fuels result in higher concentration (2)	Results from compliance source testing
lead (Pb)	60 µg/Rm ³ unless existing raw materials and conventional fuels result in higher concentration (2)	Results from compliance source testing
mercury (Hg)	20 µg/Rm ³ unless existing raw materials and conventional fuels result in higher	Results from compliance source testing or calculated as the rolling arithmetic

Table 2: In-Stack emission limits for cement and lime kilns

Parameter	In-Stack Emission Limit	Verification of Compliance [insert table 2.1]
	concentration (2)	average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
dioxins and furans	80 pg/Rm ³	Results from compliance source testing; results expressed as I-TEQ
hydrochloric acid (HCl)	18 ppm _v (27 mg/Rm ³) unless existing raw materials and conventional fuels result in higher concentration (3)	calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
sulphur dioxide (SO ₂)	Site specific limit not to exceed the stack SO ₂ concentration resulting from existing raw materials and conventional fuels. (4, 6)	calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
nitrogen oxides (NO _x)	Site specific limit not to exceed the stack NO _x concentration resulting from existing raw materials and fossil fuels (5, 6)	calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
organic matter	Section 50 (2) of <i>Ontario Regulation 419/05</i>	calculated as the rolling arithmetic average of 10 minutes of data measured by a continuous emission monitoring system that provides data at least once every minute
opacity	Section 46 of <i>Ontario Regulation 419/05</i>	calculated as the rolling arithmetic average of six (6) minutes of data measured by a continuous opacity monitor that provides data at least once every minute

Table 1: In-Stack emission limits for thermal treatment facilities excluding cement and lime kilns

Parameter	In-Stack Emission Limit	Verification of Compliance <small>Footnote 1[1]</small>
particulate matter (PM)	14 mg/Rm ³	Results from compliance source testing or calculated as the rolling arithmetic average of four (4) hours of data before dilution with any other gaseous stream, measured by a continuous emission monitoring system that provides data at least once every fifteen minutes
cadmium	7 µg/Rm ³	Results from compliance source testing
lead	60 µg/Rm ³	Results from compliance source testing
mercury	20 µg/Rm ³	Results from compliance source testing or calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
dioxins and furans	80 pg/Rm ³	Results from compliance source testing; results expressed as I-TEQ
hydrochloric acid (HCl)	18 ppm _{dv} (27 mg/Rm ³) or an HCl removal efficiency of not less than 95%	Results from compliance source testing or calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
sulphur dioxide (SO ₂)	21 ppm _{dv} (56 mg/Rm ³)	Results from compliance source testing or calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
nitrogen oxides (NO _x)	105 ppm _{dv} (198 mg/Rm ³)	Results from compliance source testing or calculated as the rolling arithmetic average of 24 hours of data measured by a continuous emission monitoring system that provides data at least once every 15 minutes
organic matter (undiluted, expressed as	50 ppm _{dv} (33 mg/Rm ³)	Results from compliance source testing or calculated as the rolling arithmetic average of 10 minutes of data at the outlet of the piece of

Table 1: In-Stack emission limits for thermal treatment facilities excluding cement and lime kilns

Parameter	In-Stack Emission Limit	Verification of Compliance <small>Footnote 1[1]</small>
equivalent methane)		equipment where combustion of the gas stream resulting from thermal treatment of waste is completed but before dilution with any other gaseous stream takes place, measured by a continuous emission monitoring system that provides data at least once every minute
carbon monoxide	35 ppmdv (40 mg/Rm ³)	calculated as the rolling arithmetic average of four (4) hours of data at the outlet of the piece of equipment where combustion of the gas stream resulting from thermal treatment of waste is completed but before dilution with any other gaseous stream, measured by a continuous emission monitoring system that provides data at least once every fifteen minutes
opacity	10 percent	calculated as the rolling arithmetic average of six (6) minutes of data measured by a continuous emission monitoring system that provides data at least once every minute
opacity	5 percent	calculated as the rolling arithmetic average of two (2) hours of data measured by a continuous emission monitoring system that provides data at least once every fifteen minutes

DYEC Emission Limits Schedule C (other parameters tested in addition)

SCHEDULE "C"

PERFORMANCE REQUIREMENTS
In-Stack Emission Limits

Parameter	In-Stack Emission Limit	Verification of Compliance
Total Suspended Particulate Matter (filterable particulate measured in accordance with the Ontario Source Testing Code)	9 mg/Rm ³	Results from compliance Source Testing
cadmium	7 µg/Rm ³	Results from compliance Source Testing
lead	50 µg/Rm ³	Results from compliance Source Testing
mercury	15 µg/Rm ³	Results from compliance Source Testing
dioxins and furans	60 pg/Rm ³	Results from compliance Source Testing, results expressed as I-TEQ
hydrochloric acid (HCl)	9 mg/Rm ³	Calculated as the rolling arithmetic average of 24 hours of data measured by a CEM System that provides data at least once every 15 minutes
sulphur dioxide (SO ₂)	35 mg/Rm ³	Calculated as the rolling arithmetic average of 24 hours of data measured by a CEM System that provides data at least once every 15 minutes
nitrogen oxides (NO _x)	121 mg/ Rm ³	Calculated as the rolling arithmetic average of 24 hours of data measured by a CEM System that provides data at least once every 15 minutes
organic matter (undiluted, expressed as equivalent methane)	50 ppm _{dv} (33 mg/ Rm ³)	Results from compliance source testing
carbon monoxide	35 ppm _{dv} (40 mg/Rm ³)	Calculated as the rolling arithmetic average of four (4) hours of data measured by a CEM System that provides data at least once every fifteen minutes, in accordance with condition 6 (2) (c)
opacity	10 percent	Calculated as the rolling arithmetic average of six (6) minutes of data measured by a CEM System that provides data at least once every minute
	5 percent	Calculated as the rolling arithmetic average of two (2) hours of data measured by a CEM System that provides data at least once every

SM should be looking to perform substantially better than the current requirements of MECP. NoX limits as one example, based on woefully outdated standards and to date has not managed to regulate PM 2.5 emissions!

There should be a full health risk assessment using the most current standards and benchmarks, conducted by independent and qualified health experts.

As the experience with the DYEC has shown, MECP is rather toothless. When the DYEC operator, Covanta, failed their first stack test for dioxins, both boilers, in fall 2015, MoECC gave them a do-over.

When a few months later Boiler 1 had a massive dioxins exceedance, MoECC did not shut them down, rather, it was a political decision by the owners to shut down and investigate and MoECC required an Abatement plan.

Water and soil monitoring in addition to air emissions - what goes out the stacks eventually deposits on soil and water so soil, groundwater and surface water monitoring should be considered given the expanded range of materials to be processed.

While I understand a cumulative impacts analysis is being/will be undertaken, will it be sufficiently comprehensive and over an appropriate time horizon e.g. consider the potential impacts of the current DYEC operations but also recently announced expansion plans (EA Screening for throughput increase to 160K tpy underway)?

Will the non-point source impacts from ongoing construction activities and then operational emissions from Highway 418 be considered, as well as potential 401 expansion plans?

Carbon emission calculations -are all over the place depending on who is doing them and for what purpose. The current provincial government has no coherent plan. Who knows what will happen federally after Oct. 21st.

You can slap on a label asserting something is low(er) carbon but does that necessarily mean that fuel substitution is less harmful overall environmentally and with fewer impacts to human health.

In your handout, (no page numbers) **“How SMC is considering the Environment”** -some things sound very similar to what was promised with the DYEC. Citizens were told that if there were problems, operators and systems would detect these and address same.

That turned out not to be the case for both of the failed stack tests i.e. operators did not detect the problem and the testing continued despite the exceedances, which were only identified when results provided by lab.

Your handout states “Alarm system is in place that emails alarms to staff when set parameters are not being met”. This MIGHT apply in case of CEMs monitored parameters but may not catch everything. Durham has had several Carbon Monoxide exceedances in the last 18 months and that is a CEMS monitored parameter.

It took many months of citizens pressing for same, but Durham finally put in place an Exceedance Notification Protocol - SM should consider same. See:

<https://www.durhamyorkwaste.ca/PublicOutreach/ECAExceedanceNotificationProtocol.aspx>

Having operated in Clarington for decades- [REDACTED], it's my belief that SM owes the impacted community a lot more than minimum standards.

SM should strive for maximum transparency, enhanced, meaningful and timely communication.

SM should be prepared to invest sufficiently in APC and comprehensive monitoring so as to identify and hopefully mitigate adverse effects to human health and natural environment.

An additional PIC should be scheduled to allow for more community education and input AFTER all related studies have been completed.

I look forward to additional material as it becomes available and thank you for this opportunity to comment.

Yours truly,

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]

February 2, 2015.

Via Email to: Anna Trikoupis: Anna.Trikoupis@Ontario.ca

Anna Trikoupis
Project Manager, Ministry of the Environment

Environmental Programs Division, Environmental Innovations Branch
40 St. Clair Avenue west, Floor 12
Toronto, Ontario M4V 1M2

Re: EBR Posting 012-1559 – Alternative “Low Carbon” Fuels in Cement, Lime, Iron and Steel Sectors - Reducing Coal Use in Energy Intensive Industries

I submit this letter as my response to the EBR posting.

Alternative “Low Carbon” Fuels in Cement, Lime, Iron and Steel –While this industry supportive messaging sounds better than admitting that your Ministry proposes to allow select industries to further pollute our communities so they could save money by burning garbage while maybe achieving GHG reductions, MoECC should not employ marketing terms like “low carbon” especially when the industries’ claims about potential reductions are not independently verified and when their various claims about no “statistically significant” rise in toxic emissions are refuted by the evidence – see the Durham Environment Watch submissions referenced below.

I understand your Ministry’s stated rationale for this change which appears to be to reduce industry use of coal/fossil fuels and the desire of these “trade exposed” industries to maintain and/or increasing their profits while having to meet fewer regulations. Making it easier for cement, steel and lime facilities to burn garbage is hardly innovative – this is done in many places including third world countries. We should not be aspiring to compete with jurisdictions with lax industrial regulations and/or where incineration and co-incineration specifically, result in poor air quality, diminished economic prospects for other sectors and adverse public health and environmental impacts.

MoECC’s job is to develop evidence based and coherent policies and then enforce them. If such policies were in place, then Ontario would have a chance to achieve not only GHG and toxics reductions but also other highly desirable social and economic objectives such as an improved public health, a cleaner environment and sustainable economy. This proposal is a big step backward.

How will GHG emissions be counted? Premature Absent Carbon Pricing

These industries, already major polluters, will be tempted to goose the GHG reduction numbers to make the purported potential reductions appear larger than they would actually be-that’s the sales pitch. Similar to the incineration industry they will want to count things like avoided landfill emissions (while disregarding that burning produces GHG emissions) and reduced emissions relating to transportation and there will be interminable inconclusive discussions about what counts and what shouldn’t which will just confuse everyone - it’s a shell game.

Will there be a verifiable independently generated GHG calculator that has broad stakeholder acceptance, with calculations for every type of eligible waste including transportation calculation related to every source of fuel with each application? This could get very complicated.

Will there be GHG reduction targets for each site, company or sector?

Absent carbon pricing –which should be implemented before this sees the light of day, what will the penalty be for not meeting GHG reduction guesstimates in applications? Is MoECC really prepared to monitor and enforce failure to meet promised emissions reductions?

Proposal is Premature -stalled Waste Reduction Act

This regulation is premature given long promised review of the Waste Reduction Act has stalled. If you are serious about climate change, a Waste Reduction Act review should be a priority of your government. 3Rs rooted comprehensive waste policy to cover all sectors would produce not just waste reduction and increased diversion, it would lower GHG and toxic emissions that are related to waste disposal i.e. incineration and landfill.

The ICI sector has a dismal diversion rate – depending on whose statistics one believes it ranges from 13 – 20%. . Without requiring the producers and/or largest generators of waste to operate under a comprehensive waste reduction policy rooted in the 3Rs, also subject to proper oversight, and requiring ICI sectors to invest in the infrastructure to support that, they will not divert waste. ICI sector will simply continue to use cheapest disposal options which are detrimental to public health and the natural environment and you open the door for further disposal options. <http://www.solidwastemag.com/features/ic-i-waste-ic-i-waste-diversion-in-ontario/>

Allowing energy intensive industries to burn garbage would stifle initiatives/investments to recycle more materials, to move towards materials reuse, repurposing and repair, discourage disassembly and materials reuse in the C & D sector etc.

Burning Valuable Resources is Bad Economic Policy

What is proposed is not just bad environmental policy but very short sighted economic policy. The Ministry of Environment's own website confirms that waste diversion (recycling, reuse - which is even more job intensive than recycling - <http://ilsr.org/recycling-means-business-job-creation-through-product-reuse/> repair, repurposing etc.) creates jobs along with socially and environmentally desirable materials management and conservation. This is hardly breaking news. A chart from the Institute of Local Self Reliance that shows the jobs created by waste processing activity –incineration is tied for dead last along with landfill. <http://ilsr.org/recycling-means-business/>

Just a few years ago MoE was set to approve the burning of tires. Now they are being recycled and there are businesses, often small businesses, which retread tires. Imagine the possibilities if MoECC resurrected the long stalled Waste Reduction Act review –one rooted in the 3Rs – and drafted comprehensive evidence based policies that would be consistent with other public/government objectives and made the primary waste generators play by the rules, maybe after incentives were in place to encourage product redesign and/or mandatory recycling and composting, maybe at that point there could be at a rational discussion about how best to deal with true residuals, instead of these one off industry floated drive by regulation that is fundamentally inconsistent with, and makes a mockery of, MoECC's mandate.

Exemption from EA and not requiring Waste Permits

The regulation also proposes to give special treatment to the cement, steel and lime industries by exempting them from the Environmental Assessment process - imperfect as that has been - and exempting them from obtaining waste disposal permits that waste incinerator and other waste proponents currently have to obtain.

They will be buying, transporting, maybe sorting onsite, maybe pretreating onsite, storing and burning waste and there are likely to be some residues that require further disposal.

While I am hardly shedding tears for the incinerator industry as just one example, this is inequitable and inconsistent policy that favours foreign owned major polluters who don't want to meet our current regulations, who want to increase their profits and who export their profits while creating relatively few jobs. Even China

has recognized that polluting its environment and damaging the health of its people being the factory for the world has its drawbacks.

No exemptions from current EA legislation and waste permitting should be granted.

Potential Reduction of GHGs – at what cost?

As mentioned above, any potential reduction in greenhouse gases would very much depend on a credible GHG emissions calculation for the type alternative fuel(s) selected and burned. Since “fuel” cost and availability are likely to be the priorities for these industries, there is no guarantee that materials ultimately selected and burned would achieve the promised GHG reductions and not result in toxic emissions increases.

What “pretreatment” and sorting of waste would be required, if any? What's to stop anyone sending what they claim would be eligible/residual waste to kilns, especially if it would be cheaper than landfill or purpose built incinerators.

How could MoECC possibly monitor the players and provide adequate enforcement?

Increased Toxics Emissions Conflict with Toxics Reduction Act

The increase in toxic emissions is completely inconsistent with the stated objectives of yet another stalled MoE initiative, Toxics Reduction Act.

Some of these alternate fuels will increase toxic emissions loadings to already stressed air sheds. . For a review of those specific toxic emission increases, please see the submission of Wendy Bracken for Durham Environment Watch relating to the St. Marys Bowmanville application which will be submitted in response to this EBR posting.

MoE must require that emissions **MUST** be reported via total annual loadings, not simply concentrations at points of impingement.

Waste that would otherwise remain relatively inert absent combustion could, when burned, be converted into toxic substances and emitted. While the industry claims that some pollutants would be destroyed – where is the evidence? Similar claims made by waste incineration proponents have been challenged.

With the ICI waste sector operating with little oversight and regulation, there is no guarantee true residual waste would actually be burned.

Site specific concerns

From the Cement Association of Canada funded May 23, 2014 “White Paper” –Page 25

Alternative fuels should be used in an environmentally sound manner. This involves the proper sorting and pretreatment of waste, clearly defining acceptance criteria, ensuring quality control of waste inputs, implementing clear regulations with enforcement to prevent pollution, and maintaining rigorous systems for site selection and permitting.

Even the industry supports “rigorous systems for site selection and permitting”. If exempted from EA and given the facilities are where they are, how exactly would this site evaluation occur – what would the criteria be?

As an example of what should be siting constraints, St. Marys in Bowmanville is located next to Darlington Nuclear Station and is less than 5 kilometers downwind of the Durham-York incinerator approved in November

2010 by the Minister of Environment at the time. St. Marys is just south of Highway 401, a major non-point source of local pollution and will be just a few kilometers from the Province's proposed 401-407 East Durham Link. Clarington has become a sacrifice zone.

Clarington's main industry is agriculture. Would MoECC require an economic impacts assessment given that pollutants will accumulate in the soil, with persistent organic pollutants entering our bodies primarily via consumption of food, especially meat, dairy, eggs? What will this do to the local food businesses that have spent a long time developing local markets for locally produced food?

Fishing is a big part of tourism in Clarington. How would mercury loadings to Lake Ontario and stream sediments affect the ability to attract fishers and those consuming fish?

Would the MoECC require proponents to independent consultants conduct Site Specific Health Risk Assessments, Air Quality Assessments, Ambient Air baseline studies for a long enough periods as well as a Cumulative Impacts Assessment so that siting decisions would be evidence based as opposed to arbitrary?

Your Ministry staff, when reviewing the Durham-York EA submissions, noted in the attached letter that at the time of EA submission, that PM 2.5 and ozone marginally complied or exceeded Ministry Limits in 2009. (V. Low Sept. 25.09). To repeat, this is an already stressed air shed, in part because of St. Marys cement, before the expected additional emissions loading from the Durham-York incinerator and before St. Marys current application. How much more pollution is that community expected to endure?

Will energy intensive industries be required to implement State of the Art APC and Monitoring?

Page 8 of the October 2010 A-7 Guideline states:

Regardless of the fuel burnt, cement and lime kilns discharge many of the same contaminants (e.g. particulate matter, metals, nitrogen oxides, sulphur dioxide etc.) into the natural environment as dedicated municipal waste thermal treatment facilities.

.... As such, cement manufacturing emissions are highly influenced not only by the properties of the combusted fuel, but by the properties of the raw materials processed. As the properties of both the raw materials and the fuels vary, emissions from cement manufacturing facilities, particularly emissions of mercury, sulphur dioxide and total hydrocarbons, also vary.

Cement and Lime kilns meet less stringent limits for certain parameters than incinerators e.g. Particulate Matter and some are granted site specific limits for other parameters such as So2 and Nox.

I can find no requirement that proponents would implement state of the art air pollution control (APC) technology or at least the same APC required by incinerators, or if not that at least some mandated improvement to APC. Is MoE really considering to let these industries to pollute at a higher level than waste incinerators yet not require them to mitigate this pollution to the degree possible by investing in state of the art air pollution control technology?

I cannot I determine that your Ministry would require Continuous Emissions Monitoring (CEMs) for all parameters where the technology exists and in use in other jurisdictions, together with Continuous Sampling for Dioxins and Mercury so that accurate data about the total annual pollution loadings to the affected communities could be evaluated. This technology is available and in use elsewhere so if cement kilns want to burn garbage, they have to comply with the few rules there are for waste incinerators.

The MoE did NOT, as an example, when approving the Certificate of Approval applications for the Durham-York incinerator, require CEMS for Particulate Matter or Continuous Sampling for Mercury to be used at the Durham-York incinerator, though that technology exists and is required and in use elsewhere. So MoE talked a good story, but didn't walk the walk.

From my observations, neither the industries nor the Ministry want anyone to really know what is coming out of those cement or incinerator stacks and especially not when it comes to problematic pollutants like PM. Ontario still doesn't regulate PM 2.5.

Secondary sort – on or off site? Define Pretreatment

Based on the very limited information provided, it is not possible to guess if on site or off site sorting of the materials to be burned would occur, would it differ between applications, etc.. This needs to be clarified as does "pretreatment" of waste – who does that and where is that done.

MoE did NOT require a secondary sort of materials for the Durham-York incinerator so recyclable and hazardous waste WILL be burned in that incinerator. While refusing to invest in on site secondary sorting, Durham staff now claim they will tip each load at the transfer station and do a "visual inspection" and remove larger problem items from the waste that might damage the burner or things like glass which don't burn. Time consuming and expensive with questionable outcomes..

If MoECC did not require a secondary sort for an incinerator by municipal proponents that could have been required to lead by example and to make that investment so as to improve emissions performance and not undermine waste diversion, with the primary goal of this proposal to save the industry money while maybe achieving some minor GHG reduction, will MoE mandate secondary sorts or proper sorting protocols? And how will that be enforced at multiple points? Without a pre-sort/secondary sort taking place somewhere, these industries will be burning recyclables and hazardous waste – full stop.

Does MoECC have the capacity and expertise to regulate and monitor industry?

When it came to the Durham-York incinerator EA and C of A applications, data deficiencies/gaps, mathematical errors and with the supporting data often in conflict with the rosy general conclusions drawn by consultants, this seemed not to have suffered from close scrutiny by MoE.

MoE's track record has made it difficult for some Durham Region residents especially to be confident that MoECC knows what the issues would be and how to address them. I have little confidence in MoECC's willingness to make evidence based recommendations and to be willing/able to provide timely and competent oversight given their conduct of the Ministry over the course of the Durham-York incinerator EA Review and thereafter.

Concerns about MoE have been expressed by others. In their May 2014 submission, CELA, called into question the expertise of your Ministry to monitor the performance of cement kilns sufficiently based on their experience with MoE as relates to Lafarge Cement application to burn tires a number of years ago.

Does MoE now have the capability and expertise to evaluate the data from a number of sources so as to come to an appropriate evidence based decision that is in the public interest?

In closing, I urge you to put protecting public health and our environment first, as per your mandate.. Please do not recommend that the Province move forward with this draft regulation.

I wish to be kept informed about any further action by the Ministry on this file including Ministry decisions on specific applications and any related ECA approvals.

Thank you in advance for considering my comments.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

CC: Tom Kaszas, Director Environmental Innovations Branch

Attachment: Letter from [REDACTED] September 25, 2009

Institute for Local Self-Reliance Jobs Table

Job Creation: Reuse and Recycling Vs. Disposal

Type of Operation	Jobs per 10,000 TPY
Product Reuse	
Computer Reuse	296
Textile Reclamation	85
Misc. Durables Reuse	62
Wooden Pallet Repair	28
Recycling-based Manufacturers	25
Paper Mills	18
Glass Product Manufacturers	26
Plastic Product Manufacturers	93
Conventional Materials Recovery Facilities	10
Composting	4
Landfill and Incineration	1

TPY = tons per year

Note: Figures are based on interviews with select facilities around the country.

Source: Institute for Local Self-Reliance, Washington, DC, 1997.

January 20, 2020.

Via Email to: ruben.plaza@vcimentos.com and Sarah_schmied@golder.com

Mr. Ruben Plaza
St. Marys Cement
Corporate Environmental Manager, North America

And

Sarah Schmied
Golder Associates Ltd.
Project Manager
Environmental Assessment Specialist

Re: St. Marys Alt Low Carbon Fuel – Comments re PIC 2

Thank you for the opportunity to comment. I have the same concerns I submitted in my comments October 14th 2019 and provide a few additional comments below.

Re PIC 2 Slide 6/38 – What is an Alternative Low Carbon Fuel?

I reviewed O. Reg. 79/15 (<https://www.ontario.ca/laws/regulation/150079>), the definition of ALCF and Schedule 1. Then reviewed Slide 12/27 of PIC 1 slide deck.

From O.Reg 79/15:

- 1.The fuel,
 - i. is not derived from or composed of any material set out in Schedule 1,
 - ii. is wholly derived from or composed of materials that are biomass or **municipal** waste or a combination of both, and
 - iii. unless the fuel is wholly derived from or composed of materials that are solid biomass, has a high heat value of at least 10,000 megajoules per tonne.
- 2.The fuel is wholly derived from or composed of organic matter, not including peat or peat derivatives, derived from a plant or micro-organism and grown or harvested for the purpose of being used as a fuel;

From PIC 1 Slide deck page 12 and PIC slide deck page 14:

“From September 2018 to December 2018 SMCB carried out a demonstration project to use residuals derived from **industrial** and/or post consumer sources including plastics polymers, paper fibres and woody materials as ALCFs at the site...

Without knowing what specific industrial wastes were used for your testing, e.g. plastics like PVC can be very problematic, it's not possible for me to assess if these within the definitions of ALCFs as per O.Reg 79/15.

This brings me back to my comments from October 14, 2019 – without knowing specific ALCFs /wastes used in your testing period, it's impossible to assess your emissions inventory and whether 2018 tests would be representative of the variable wastes you intend to process.

As I commented earlier, while there may be some carbon emission reductions, this may result in other toxic emissions – at this time impossible to assess without more details about sources and types of waste you intend to process.

If this were an EA you would need to specify a Waste Service Area -you should do that.

Outdated Provincial Air Standards and NEW CAAQs for NO2 and SO2.

Many of the Province's standards are inadequate and grossly outdated.

There is still no standard for PM 2.5.

See pasted in below a screenshot of a table showing some of the Province's air standards and the dates since which they are in effect, this from Sept. 2019 Correspondence from MECP:

Contaminant	CAS #	Basis	Year
Arsenic and compounds	7440-38-2	Health-based air guideline	1981
Lead and Lead Compounds	7439-92-1	Health-based air standard	2007
Nickel and Nickel Compounds	7440-02-0	Health-based air standard	2011
Zinc	7440-66-6	Particulate-based air standard	1974
Copper	7440-50-8	Health-based air standard	1974
Mercury (Hg)	7439-97-6	Health-based air standard	1974
Lithium (other than hydrides)	7439-93-2	Health-based air standard	1974
Ozone	10028-15-6	Health-based air standard	1974
Particulate matter	N/A	Visibility; air standard	2005
Carbon monoxide	630-08-0	Health-based air standard	1974

In your table on page 32 of PIC 2 slides, SM is NOT comparing NO2 and SO2 to the new CAAQs, which in the case of SO2 comes into effect in Ontario in 2023.

SM should revise and update calculations for NO2 and SO2 and compare these to revised CAAQs for at least information purposes.

Quantity of ALCF to be processed

Slide 5/38 – states daily throughput will be increased to 400 Tonnes per day of ALCFs equaling 30% “Thermal Replacement”, materials will have a high heat value minimum 10,000 Megajoules.

Since it appears that a variety of ALCF materials may be used, with a range of high heat values. How would varying HHWs affect total tonnage throughput so as to achieve 30% thermal replacement i.e. would it ever increase beyond 400 tonnes per day?

Quality of final products due to use of ALCFs

While you are using ALCFs as fuel, when inputs are substituted, it reminds me of the problems with Chinese drywall about a decade ago.

Link and full article pasted in below at end. .

Will final application be posted to the EBR for broader public comment?

Even if not required, it should be.

I look forward to being notified about future opportunities to comment on this project.

Yours truly,

██████████
██████████
██████████

Chinese drywall creating crisis

By [Bob Aaron](#) Contributing Columnist

Sat., June 20, 2009 timer 3 min. read

The issue of toxic Chinese drywall may well become the biggest environmental crisis to hit North American homeowners and builders in decades.

The defective Chinese drywall emits toxic hydrogen sulphide, sulphur dioxide and other gases. It is believed that humidity in the air causes the sulphur in the drywall to off-gas, or migrate into the indoor air. This creates a noxious odour, and can result in serious health conditions and illnesses, such as breathing problems, eye irritation, fatigue, dizziness, insomnia, sore throat, bloody nose, and headaches.

When the sulphide gas comes into contact with normal home humidity, it gives off a rotten egg smell, and begins to corrode any exposed copper or lead in the home. Affected homeowners have reported blackened and scorched wiring behind wall plugs and switch plates, and corroded evaporator coils on air conditioning units. Light bulbs and fixtures may also stop working.

Appliances and other electrical equipment may fail prematurely, and personal jewelery and silverware as well as the wiring in cable televisions and converters can turn black.

Hundreds of millions of sheets of the defective drywall were imported into the United States between 2001 and 2007. It has been reported in as many as 14 states, and may have been used in an estimated 100,000 renovated and newly-built homes, with up to 40,000 in Florida alone.

In addition, an estimated 929,000 square metres arrived in Canada through Vancouver in the same period.

Much of the product imported into Canada was used in the lower B.C. mainland, but some may have reached the Prairies and as far east as Toronto.

In addition to being used in new construction and renovations, a huge amount of the Chinese drywall was used to repair thousands of homes damaged by Hurricanes Katrina and Wilma in Louisiana, Mississippi, Florida, and Texas. Sadly, many will have to be rebuilt a second time.

One prevalent theory about the toxicity in the drywall is that it was manufactured in gypsum mines in China using fly ash, a by-product of coal-powered electrical generation. Coal fly ash can become airborne and emit toxic sulphur compounds.

(Coincidentally, defective fly ash was the critical ingredient in ready-mix concrete used in the crumbling foundations of hundreds of homes in Eastern Ontario. This resulted in 16 years of litigation, almost \$20 million in damages and another \$20 million in court costs.)

Several lawsuits and class actions, including one by a group of Florida homeowners, have been launched against German drywall company Knauf Gips KG, a Chinese subsidiary and a number of American home builders.

The Environmental Protection Agency, the federal Consumer Product Safety Commission and the Florida Department of Health in the United States are all investigating the extent of the problem.

In the United States House of Representatives, the Drywall Safety Act was introduced in April. Currently under study in a House committee, it would mandate a recall of drywall imported between 2004 and 2007.

Houses built or renovated with contaminated Chinese drywall cannot be repaired. The only possible fix for affected homes is to have the owners move out for several months, gut the house and rebuild the interior. Anything inside the house that may have been contaminated by the sulphur gases will also have to be destroyed and replaced.

Industry watchers have estimated that as few as three sheets of drywall in a house can be enough to contaminate it to the point of making it uninhabitable.

House insurance policies do not normally cover environmental issues, and there have been reports of some home insurers refusing to pay for replacement of drywall. In cases like these, homeowners could be facing financial ruin.

Thomas Martin, president of America's Watchdog, says the crisis is "the worst case of sick houses in U.S. history."

The full effect of the Chinese drywall crisis in Canada remains to be seen.

If you suspect you have this product in your home, consult an environmental engineer or qualified home inspector.

Bob Aaron is a Toronto real estate lawyer and board member of the Tarion Warranty Corp. He can be reached at bob@aaron.ca. His website: aaron.ca.

March 3, 2020

RE: Alternative Low Carbon Fuel Use at the St. Marys Cement Bowmanville Plant

Dear [REDACTED],

Thank you for submitting your comments and concerns regarding the Alternative Low Carbon Fuel Application for the St Marys Cement (SMC) Bowmanville Plant. The Project Team's responses to your comments that we received are below in Table 1 for Public Meeting #2, and Table 2 for Public Meeting #1.

Table 1: Project Team Responses to Comments Received after Public Meeting #2

ID	Comment	Response
1	<p>I reviewed O. Reg. 79/15 (https://www.ontario.ca/laws/regulation/150079), the definition of ALCF and Schedule 1. Then reviewed Slide 12/27 of PIC 1 slide deck.</p> <p>From O.Reg 79/15:</p> <ol style="list-style-type: none"> 1.The fuel, <ol style="list-style-type: none"> i. is not derived from or composed of any material set out in Schedule 1, ii. is wholly derived from or composed of materials that are biomass or municipal waste or a combination of both, and iii. unless the fuel is wholly derived from or composed of materials that are solid biomass, has a high heat value of at least 10,000 megajoules per tonne. 2.The fuel is wholly derived from or composed of organic matter, not including peat or peat derivatives, derived from a plant or micro-organism and grown or harvested for the purpose of being used as a fuel; <p>From PIC 1 Slide deck page 12 and PIC slide deck page 14:</p> <p>"From September 2018 to December 2018 SMCB carried out a demonstration project to use residuals derived from industrial and/or post consumer sources including plastics polymers, paper fibres and woody materials as ALCFs at the site..."</p>	<p>Municipal Waste as used in Ontario Regulation (O. Reg.) 79/15 is defined under Regulation 347 of the <i>Environmental Protection Act</i> as follows:</p> <ol style="list-style-type: none"> (a) Any waste, whether or not it is owned, controlled or managed by a municipality, except, <ol style="list-style-type: none"> (i) Hazardous waste, (ii) Liquid industrial waste, or (iii) Gaseous waste, and (b) Solid fuel, whether or not it is waste, that is derived in whole or in part from the waste included in clause (a). <p>O. Reg 79/15 clearly defines what materials cannot be used as ALCFs under an approval (O. Reg 79/15 Schedule 1), which includes but is not limited to hazardous waste and waste that that is set-out for recycling programs. SMC will not be taking any of the materials that are prohibited as part of Schedule 1. All Alternative Low Carbon Fuel (ALCF) materials are individually vetted by SMC's Alternative Low Carbon Fuel personnel who carefully assess sources of materials for their heat value and compatibility with the plant's system, their chemical composition, and their compliance with permits and approvals at each site.</p> <p>SMC is not interested in burning PVCs. Chlorine content impacts cement quality therefore it is always an acceptance criterion. This criterion</p>

ID	Comment	Response																																												
	<p>Without knowing what specific industrial wastes were used for your testing, e.g. plastics like PVC can be very problematic, it's not possible for me to assess if these within the definitions of ALCFs as per O.Reg 79/15. This brings me back to my comments from October 14, 2019 – without knowing specific ALCFs /wastes used in your testing period, it's impossible to assess your emissions inventory and whether 2018 tests would be representative of the variable wastes you intend to process.</p> <p>As I commented earlier, while there may be some carbon emission reductions, this may result in other toxic emissions – at this time impossible to assess without more details about sources and types of waste you intend to process.</p> <p>If this were an EA you would need to specify a Waste Service Area -you should do that.</p>	<p>will inherently limit the type and quantity of plastics accepted.</p> <p>SMC is preparing a Fuel Handling Procedures document which will be submitted to the Ministry of the Environment, Conservation and Parks (MECP) as part of the Environmental Compliance Approval (ECA) Application. This document will clearly outline the details for quality assurance and testing measures that SMC will be required to follow to meet the regulatory criteria and their ECA Approval, once granted.</p>																																												
2	<p>Outdated Provincial Air Standards and NEW CAAQs for NO2 and SO2.</p> <p>Many of the Province's standards are inadequate and grossly outdated. There is still no standard for PM 2.5. See pasted in below a screenshot of a table showing some of the Province's air standards and the dates since which they are in effect, this from Sept. 2019 Correspondence from MECP:</p> <table border="1" data-bbox="245 1016 776 1377"> <thead> <tr> <th>Contaminant</th> <th>CAS#</th> <th>Basis</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>Arsenic and compounds</td> <td>7440-38-2</td> <td>Health-based air guideline</td> <td>1981</td> </tr> <tr> <td>Lead and Lead Compounds</td> <td>7439-92-1</td> <td>Health-based air standard</td> <td>2007</td> </tr> <tr> <td>Nickel and Nickel Compounds</td> <td>7440-02-0</td> <td>Health-based air standard</td> <td>2011</td> </tr> <tr> <td>Zinc</td> <td>7440-66-6</td> <td>Particulate-based air standard</td> <td>1974</td> </tr> <tr> <td>Copper</td> <td>7440-50-8</td> <td>Health-based air standard</td> <td>1974</td> </tr> <tr> <td>Mercury (Hg)</td> <td>7439-97-6</td> <td>Health-based air standard</td> <td>1974</td> </tr> <tr> <td>Lithium (other than hydrides)</td> <td>7439-93-2</td> <td>Health-based air standard</td> <td>1974</td> </tr> <tr> <td>Ozone</td> <td>10028-15-6</td> <td>Health-based air standard</td> <td>1974</td> </tr> <tr> <td>Particulate matter</td> <td>N/A</td> <td>Visibility; air standard</td> <td>2005</td> </tr> <tr> <td>Carbon monoxide</td> <td>630-08-0</td> <td>Health-based air standard</td> <td>1974</td> </tr> </tbody> </table> <p>In your table on page 32 of PIC 2 slides, SM is NOT comparing NO2 and SO2 to the new CAAQs, which in the case of SO2 comes into effect in Ontario in 2023. SM should revise and update calculations for NO2 and SO2 and compare these to revised CAAQs for at least information purposes.</p>	Contaminant	CAS#	Basis	Year	Arsenic and compounds	7440-38-2	Health-based air guideline	1981	Lead and Lead Compounds	7439-92-1	Health-based air standard	2007	Nickel and Nickel Compounds	7440-02-0	Health-based air standard	2011	Zinc	7440-66-6	Particulate-based air standard	1974	Copper	7440-50-8	Health-based air standard	1974	Mercury (Hg)	7439-97-6	Health-based air standard	1974	Lithium (other than hydrides)	7439-93-2	Health-based air standard	1974	Ozone	10028-15-6	Health-based air standard	1974	Particulate matter	N/A	Visibility; air standard	2005	Carbon monoxide	630-08-0	Health-based air standard	1974	<p>As indicated in the air quality study, the current/latest Ambient Air Quality Criteria (AAQC) from the MECP's website (updated on April 30, 2019) were used. When an AAQC is not available, Canadian Ambient Air Quality Standards (CAAQs) are used as the reference levels for this study.</p> <p>It is unclear if your table is referring to point of impingement (POI) limits or AAQCs. Regardless we note that the table is incorrect for nickel and lead. New lead standards were introduced in 2010 and new annual standards for nickel were introduced in 2016.</p> <p>As described in both the <i>Air Quality Study and Cumulative Effects Assessment</i> and the <i>Alternative Fuel Demonstration Summary Report</i>, one of the primary purposes of these studies is to confirm that there will be no statistically significant changes in kiln stack emissions, and the resultant ambient concentrations. The Emissions Summary and Dispersion Modelling (ESDM) that will support the application confirms that the facility can comply with all current POI limits. SMC will be required to comply with any new POI limits as they come into effect regardless of the fuel used, typically the Ministry allows a phase-in period when they introduce new POI limits. SMC will continue to work on initiatives to reduce other pollutants.</p>
Contaminant	CAS#	Basis	Year																																											
Arsenic and compounds	7440-38-2	Health-based air guideline	1981																																											
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3	<p>Quantity of ALCF to be processed</p> <p>Slide 5/38 – states daily throughput will be increased to 400 Tonnes per day of ALCFs equaling 30% "Thermal Replacement", materials will have a high heat value minimum 10,000 Megajoules.</p>	<p>O. Reg 79/15 only specifies tonnage in terms of a demonstration project. As part of the ALCF Application SMC will be applying for a maximum of 400 tonnes per day substitution (approximately 30% thermal replacement). Daily tonnage will vary slightly depending on the exact</p>																																												

ID	Comment	Response
	Since it appears that a variety of ALCF materials may be used, with a range of high heat values. How would varying HHWs affect total tonnage throughput so as to achieve 30% thermal replacement i.e. would it ever increase beyond 400 tonnes per day?	fuel mix due to a potential range in heat value that can be recovered from the fuels. O. Reg. 79/15 includes specifications about how much fuel can be stored on site as being reasonably capable of being combusted during a period of six months.
4	Quality of final products due to use of ALCFs While you are using ALCFs as fuel, when inputs are substituted, it reminds me of the problems with Chinese drywall about a decade ago. Link and full article pasted in below at end.	SMC / Votornatim Cimentos North America stands-by the production of quality cement. In addition to the testing that SMC undertakes for emissions compliance, SMC conducts additional compliance testing of ALCFs to ensure that the ALCF chemical composition is suitable for their product.
5	Will final application be posted to the EBR for broader public comment? Even if not required, it should be.	Yes the application will be posted to the Ontario Ministry of the Environment, Conservation and Park's Environmental Registry.

Table 2: Project Team Responses to Comments Received after Public Meeting #1

ID	Comment	Response
1	<p>An overriding concern that remains that St. Marys (SM) will be "processing" waste materials without also being required to undertake an Environmental Assessment study and it's not clear to me what amendments to your ECA would be required at this time, this though you may be "processing" waste close to the maximum amount the Durham York Energy Centre (DYEC) is currently processing, i.e.</p> <p>140,000 tonnes per year. Though very much imperfect processes, at least the DYEC went through an individual EA and a somewhat speedy ECA.</p>	<p>The MECP developed the O. Reg 79/15 ALCF process to reduce direct greenhouse gas (GHG) emissions by using carbon neutral biomass which also offsets indirect GHG emissions such as mining, transportation and landfill and maintain protection of the natural environment and human health.</p> <p>Under both an approval to use conventional fuels and under an O. Reg 79/15 approval to use ALCFs, a site must remain in compliance with O. Reg 419. With both approvals MECP will include ongoing testing requirements for fuels (ALCFs and conventional fuels) so that ongoing compliance with O. Reg. 419 will be maintained.</p> <p>SMC is required to amend their ECA for air emissions as part of this application which takes into consideration the emissions associated with the use of conventional fuels and ALCFs. The updated ESDM report will demonstrate that the air contaminants will remain below their respective POI limits, annual source testing and ambient PM10 monitoring are the current practices at SMC's Bowmanville Cement Plant to monitor kiln stack emissions and ambient dust levels from all operations including aggregate extraction at the onsite quarry. During the ECA application review process, the MECP will determine what additional monitoring may be required.</p>

ID	Comment	Response
		<p>The MECP developed the O. Reg. 79/15 ALCF process as they recognized that the ALCFs can be used by facilities that are not purposely built to generate Energy from Waste.</p> <p>The Durham York Energy Centre (DYEC) is a different type of facility than SMC's Bowmanville Cement Plant. As stated on the DYEC's website, durhamyorkwaste.ca, the DYEC is a waste management facility that produces energy from the combustion of household waste. SMC's Bowmanville Cement Plant is a cement plant and is applying to use alternative fuel sources, such as ALCFs, to produce quality cement. The process for using ALCFs at a cement plant is different than an incinerator as the materials that can be used are different (e.g. ALCFs to produce cement have to remain compliant with not only MECP regulator requirements but also compliant with the manufacturing process in order to produce quality cement), and the systems are built differently. The cement kiln operates at extremely high temperatures (1,550 °C) and ALCFs cannot be introduced into the kiln during start-up or shut-down procedures when the temperature is not at that point in order to ensure complete combustion of the fuels. The cement kiln also has a long residence time for fuels.</p> <p>The process defined by O. Reg 79/15 has many of the same requirements as preparing a full Environmental Assessment, and SMC has completed additional studies to support this application, such as the Air Quality and Cumulative Effects Assessment, the Acoustics Assessment, the Traffic Impact Study</p>
2	Without access to complete testing data, assertions about matters ranging from fuel quality and emissions are impossible to assess.	The results of the Air Quality and Cumulative Effects Assessment and Carbon Dioxide Emission Intensity Report were provided at Public Meeting #2, and once the reports were finalized, they were made available on the Project Website and notification was sent to the contact list.
3	Without a defined Waste Service Area and a description of the full range of materials to be processed, it's impossible to assess the materials composition.	Wherever possible, SMC is focusing on using locally sourced ALCFs, which are in the best interest of the community, SMC, and the environment. The transportation distances are expected to be much less than the transportation of conventional fuels to the site, along with the environmental impact of relying on the conventional fuels.

ID	Comment	Response
		<p>In response to questions we heard a Public Meeting #1, SMC included a list of potential ALCFs at Public Meeting #2 which may include:</p> <ul style="list-style-type: none"> • Paper / paper fibre materials • Cardboard • Cotton • Textiles • Construction and demolition materials • Non-recyclable plastics • Ragger tails from cardboard and paper recycling • Packaging material from consumer products • Materials derived from agricultural crop production that cannot be consumed (not including materials derived from animals or animal by-products) <p>Samples of the ALCF materials were also brought to both public meetings / open houses for public to be able to view a typical ALCF mix in a glass jar.</p> <p>As indicated in Table 1 above, ID #1, all ALCF materials are individually vetted by SMC's Alternative Low Carbon Fuel personnel who carefully assess sources of materials for their heat value and compatibility with the plant's system, their chemical composition, and their compliance with permits and approvals at each site.</p>
4	<p>What is also troubling is that some of the post-consumer waste SM might process, should not be produced at all if it's not recyclable. Essentially, the industry producing those non-recyclable tinted bottles (assuming that claim is true), is able to offload their disposal problem to SM (and our air shed) in a manner that may be profitable for both companies, rather than change their business practices and without materials inventory/composition analysis, how could Golder (or other) produce an emissions inventory, which would be required to assess potential impact of air emissions, which in turn would be needed to determine what type of air pollution control technology would be most suitable to address a different emissions profile.</p> <p>Without knowing the foregoing, it would be most challenging to propose a sufficiently comprehensive monitoring program. – one that should increase the number of parameters to be monitored given the ALCF, with increased frequency of stack testing and a more comprehensive ambient air monitoring program.</p>	<p>SMC is committed to respecting the current and future needs of the environment. Unfortunately, there are many materials that are currently being produced every day that cannot be recycled and therefore continue to be destined for landfills. The cost of these materials going to landfills is not only an environmental cost (e.g. release of methane into the environment) but also a community cost (e.g. space available in landfills is becoming more and more limited). By SMC using these materials (e.g. post-consumer waste that you have referenced) that have high heat values, we are able to recover the value from those materials and replace the amount of conventional fuels we rely on. This also contributes positively in terms of GHG reductions, as these ALCFs have a lower carbon dioxide emission intensity than the conventional fuels (coal, petcoke). As stated in ID #3 in Table 2 above, wherever possible, SMC is focusing on using locally sourced ALCFs, which are in the best interest of the community, SMC, and the environment. The transportation distances are expected to be much less than the transportation of conventional fuels to the site, along with the</p>

ID	Comment	Response
	<p>E.g. the Durham York Energy Centre (DYEC) was required to do one regulatory source test annually. Citizens persuaded Durham Council to do an additional stack test, so called “voluntary” source test and it continues to this day.</p> <p>To be a good corporate citizen, SM should consider increasing ST frequency to at least two per year.</p> <p>SM should be looking to perform substantially better than the current requirements of MECP. NoX limits as one example, based on woefully outdated standards and to date has not managed to regulate PM 2.5 emissions!</p>	<p>environmental impact of relying on the conventional fuels.</p> <p>SMC is required to amend their ECA for air emissions as part of this application which takes into consideration the emissions associated with the use of conventional fuels and ALCFs. The updated ESDM report will demonstrate that the air contaminants will remain below their respective POI limits. Annual source testing and ambient PM10 monitoring are the current practices at SMC’s Bowmanville Cement Plant to monitor kiln stack emissions and ambient dust levels from all operations including aggregate extraction at the onsite quarry. During the ECA application review process, the MECP will determine what additional monitoring may be required.</p>
5	<p>There should be a full health risk assessment using the most current standards and benchmarks, conducted by independent and qualified health experts.</p> <p>As the experience with the DYEC has shown, MECP is rather toothless. When the DYEC operator, Covanta, failed their first stack test for dioxins, both boilers, in fall 2015, MoECC gave them a do-over.</p> <p>When a few months later Boiler 1 had a massive dioxins exceedance, MoECC did not shut them down, rather, it was a political decision by the owners to shut down and investigate and MoECC required an Abatement plan.</p> <p>Water and soil monitoring in addition to air emissions - what goes out the stacks eventually deposits on soil and water so soil, groundwater and surface water monitoring should be considered given the expanded range of materials to be processed.</p>	<p>The MECP developed the O. Reg. 79/15 ALCF process to reduce direct GHG emissions by using carbon neutral biomass which also offsets indirect GHG emissions such as mining, transportation and landfill and maintain protection of the natural environment and human health.</p> <p>Under both an approval to use conventional fuels and under an O. Reg 79/15 approval to use ALCFs, a site must remain in compliance with O. Reg 419. With both approvals MECP will include ongoing testing requirements for fuels (ALCFs and conventional fuels) so that ongoing compliance with O. Reg. 419 will be maintained. Deposition modelling is not required as part of the current ECA process.</p>
6	<p>While I understand a cumulative impacts analysis is being/will be undertaken, will it be sufficiently comprehensive and over an appropriate time horizon e.g. consider the potential impacts of the current DYEC operations but also recently announced expansion plans (EA Screening for throughput increase to 160K tpy underway)?</p> <p>Will the non-point source impacts from ongoing construction activities and then operational emissions from Highway 418 be considered, as well as potential 401 expansion plans?</p>	<p>The Air Quality and Cumulative Effects Assessment considered effects from major sources including Highway 401 and the proposed optimization of the DYEC to 160,000 tonnes per year. The study assessed against Ontario’s Ambient Air Quality Standards and considered the change in concentrations between using conventional fuel only and the conventional fuel with the ALCFs. The assessment was prepared in a conservative manner, representing worst-case daily emissions (e.g. the kiln is shut-down periodically throughout the year at which times emissions would be zero).</p>
7	<p>Carbon emission calculations -are all over the place depending on who is doing them and for what purpose. The current provincial government has no coherent plan. Who knows what will happen federally after Oct. 21st.</p>	<p>The MECP developed the O. Reg. 79/15 Alternative Low Carbon Fuels (ALCF) process to reduce direct greenhouse gas (GHG) emissions by using carbon neutral biomass which also</p>

ID	Comment	Response
	<p>You can slap on a label asserting something is low(er) carbon but does that necessarily mean that fuel substitution is less harmful overall environmentally and with fewer impacts to human health.</p>	<p>offsets indirect GHG emissions such as mining, transportation and landfill and maintain protection of the natural environment and human health.</p> <p>The <i>Carbon Dioxide Emission Intensity Report</i> followed the sampling and analysis procedures for each of the conventional fuels and ALCFs as outlined in O. Reg. 79/15.</p> <p>As presented at Public Meeting / Open House #2 in December 2019 the proposed increase in use of ALCFs at the Bowmanville Cement Plant is expected to reduce GHG emissions and is not anticipated to produce negative impacts to the environment. To demonstrate this the following assessments were completed in consideration of the proposed replacement of conventional fuels (coal and petroleum coke):</p> <ul style="list-style-type: none"> • Air Quality Study and Cumulative Effects Assessment; and • Carbon Dioxide Emission Intensity Assessment <p>The <i>Air Quality Study and Cumulative Effects Assessment</i> and the <i>Alternative Fuel Demonstration Summary Report</i> were prepared in a conservative manner as explained at Public Meeting #2. Both studies determined that there were no statistically significant changes in kiln stack emissions, ambient concentrations, POI concentrations and cumulative effects as a result of the use of ALCF relative to conventional fuels. Local air quality is anticipated to continue to improve as a result of provincial and international initiatives and SMC is continuing to look into initiatives to reduce emissions.</p>
8	<p>In your handout, (no page numbers) “How SMC is considering the Environment” -some things sound very similar to what was promised with the DYEC. Citizens were told that if there were problems, operators and systems would detect these and address same.</p> <p>That turned out not to be the case for both of the failed stack tests i.e. operators did not detect the problem and the testing continued despite the exceedances, which were only identified when results provided by lab.</p> <p>Your handout states “Alarm system is in place that emails alarms to staff when set parameters are not being met”. This MIGHT apply in case of CEMs monitored parameters but may not catch everything. Durham has had several Carbon Monoxide exceedances in the last 18 months and that is a CEMS monitored parameter.</p>	<p>Thank you for your comment.</p> <p>Under both an approval to use conventional fuels and under an O. Reg 79/15 approval to use ALCFs, a site must remain in compliance with O. Reg 419. With both approvals MECP will include ongoing testing requirements for fuels (ALCFs and conventional fuels) so that ongoing compliance with O. Reg. 419 will be maintained. ECAs typically include reporting practices for exceedances.</p> <p>SMC is required to report annual emissions through a number of complimentary regulatory requirements and this data will be made available to the public following the reporting year.</p> <p>Local air quality is anticipated to continue to improve as a result of provincial and international initiatives and SMC is continuing to look into initiatives to reduce emissions.</p>

ID	Comment	Response
	<p>It took many months of citizens pressing for same, but Durham finally put in place an Exceedance Notification Protocol - SM should consider same. See: https://www.durhamyorkwaste.ca/PublicOutreach/ECAExceedanceNotificationProtocol.aspx</p> <p>Having operated in Clarington for decades- [REDACTED], it's my belief that SM owes the impacted community a lot more than minimum standards.</p> <p>SM should strive for maximum transparency, enhanced, meaningful and timely communication.</p> <p>SM should be prepared to invest sufficiently in APC and comprehensive monitoring so as to identify and hopefully mitigate adverse effects to human health and natural environment.</p>	
9	<p>An additional PIC should be scheduled to allow for more community education and input AFTER all related studies have been completed.</p>	<p>The results of the supporting studies were presented at Public Meeting #2 and when the <i>Air Quality and Cumulative Effects Assessment Report</i> and the <i>Carbon Dioxide Emission Intensity Report</i> were finalized and loaded onto the project website, notification was sent to everyone on the contact list. Comments can still be provided by the public during the ECA application process.</p>

Please contact me by phone at 416-366-6999 extension 2211 or by email at sarah_schmied@golder.com if you have any additional questions or comments. You may also wish to contact Ruben Plaza, Corporate Environmental Manager North America, at St Marys Cement at 905-623-3341 or by email at Ruben.Plaza@vcimentos.com.

Respectfully,

Sarah Schmied
Golder Associates Ltd.
Sarah_schmied@golder.com
416-366-6999 x2211

Alternative Low Carbon Fuel Use at St Marys Cement Bowmanville Plant Public Meeting / Open House #1 – Comments from [REDACTED]

Comments about the proposed application or demonstration project:

I have numerous concerns about the application and about the demonstration project. I address some of these concerns by category below:

Concern with Application Under Regulation 79/15

The details of the application requirements and rationale for why St Marys is proceeding under this new regulation were not given and only very general information was provided.

This is a very major change to the operations of St Marys with the operation targeting 30% thermal replacement of conventional fuels. There are potential major environmental and health impacts which have not been adequately acknowledged nor addressed nor evaluated in the small demonstration project St Marys is using to justify the changes to their fueling operations. **Such major changes to the fuel warrant a full environmental assessment.**

St Mary's Current ECAs would Need to Be Updated with Much More Stringent Limits and Ambient Air Monitoring Must Have Major Improvements

With 30% thermal replacement, St Marys Cement plant would be burning residuals derived from industrial and/or post-consumer sources including plastic polymers, paper fibres and woody materials as alternative low carbon fuels. The annual quantities of residuals proposed to be burned by St Marys are almost equivalent to the entire annual capacity of the Durham-York incinerator which currently burns 140,000 tonnes per year.

In burning such a great quantity of industrial and municipal residuals, St Marys becomes both an incinerator and a cement company. Under this proposal, St Marys would move to a more variable feedstock which also has all of the inherent risks (and likely additional risks as some will come from industrial sources) of municipal incineration, yet the ECAs under which St Marys currently operates do not have the same requirements.

The ECAs under which St Marys currently operates are not as stringent as what is required for the Durham York incinerator. The limits are clearly more stringent for particulate matter, lead, mercury, dioxins and furans, hydrochloric acid, and opacity at the DYEC. It is unacceptable that St Marys is proposing to alter their fuel so substantially by burning massive amounts of municipal and industrial residuals without upgrading their ECAs and stack and ambient air monitoring programs accordingly with more stringent limits. This is particularly important for dioxins and furans, heavy metals, halogens, PAHs, chlorobenzenes and chlorophenols and other toxins associated with incineration.

St Marys ECA Schedule B Limits (Source: St Marys' handout at the Public Meeting)

Parameter	Baseline Results	LCF Results	ECA Limit
Limits in Schedule B of the C of A (0469-9YUNSK)			
Particulate Matter	12.4 mg/Rm ³	7.97 mg/Rm ³	50 mg/Rm ³
Cadmium	0.192 µg/Rm ³	0.215 µg/Rm ³	7 µg/Rm ³
Lead	7.25 µg/Rm ³	5.44 µg/Rm ³	60 µg/Rm ³
Mercury	2.46 µg/Rm ³	2.44 µg/Rm ³	20 µg/Rm ³
Dioxins and Furans	16.6 pg/Rm ³ as ITEQ	14.7 pg/Rm ³ as ITEQ	80 pg/Rm ³ as ITEQ
Hydrochloric Acid	8.78 mg/Rm ³	6.86 mg/Rm ³	27 mg/Rm ³
Opacity	3.8%	3.8%	20%

Durham York ECA Schedule C Limits (Source: Durham York Covanta ECA)

SCHEDULE "C"

PERFORMANCE REQUIREMENTS
In-Stack Emission Limits

Parameter	In-Stack Emission Limit	Verification of Compliance
Total Suspended Particulate Matter (filterable particulate measured in accordance with the Ontario Source Testing Code)	9 mg/Rm ³	Results from compliance Source Testing
cadmium	7 µg/Rm ³	Results from compliance Source Testing
lead	50 µg/Rm ³	Results from compliance Source Testing
mercury	15 µg/Rm ³	Results from compliance Source Testing
dioxine and furans	60 pg/Rm ³	Results from compliance Source Testing; results expressed as I-TEQ
hydrochloric acid (HCl)	9 mg/Rm ³	Calculated as the rolling arithmetic average of 24 hours of data measured by a CEM System that provides data at least once every 15 minutes
sulphur dioxide (SO ₂)	35 mg/Rm ³	Calculated as the rolling arithmetic average of 24 hours of data measured by a CEM System that provides data at least once every 15 minutes
nitrogen oxides (NO _x)	121 mg/ Rm ³	Calculated as the rolling arithmetic average of 24 hours of data measured by a CEM System that provides data at least once every 15 minutes
organic matter (undiluted, expressed as equivalent methane)	50 ppm _{dv} (33 mg/ Rm ³)	Results from compliance source testing
carbon monoxide	35 ppm _{dv} (40 mg/Rm ³)	Calculated as the rolling arithmetic average of four (4) hours of data measured by a CEM System that provides data at least once every fifteen minutes, in accordance with condition 6 (2) (c)
opacity	10 percent	Calculated as the rolling arithmetic average of six (6) minutes of data measured by a CEM System that provides data at least once every minute
	5 percent	Calculated as the rolling arithmetic average of two (2) hours of data measured by a CEM System that provides data at least once every

While Schedule B was provided for one of St Marys ECA Approvals, the public was not provided with what other contaminants St Marys is presently required by the MECP to assess for during stack testing. The Durham York incinerator is required to stack test additional and numerous contaminants under Schedule D of the ECA it operates under, yet the public could not readily compare as St Marys did not supply that information. It is concerning that St Marys did not communicate what parameters are tested under its present Source Testing program and what their intentions are with respect to upgrading that testing now that they are considering burning large quantities of garbage.

Concerns With Scale of the Demonstration Project, Insufficient Information Provided, Incomplete Emissions Inventory

I am very concerned that the underlying documents of the demonstration project, including the lab analysis and detailed testing reports, have not been provided. Insufficient information has been provided.

Without knowing how extensive the testing was, for what and for how many hours and days, and how the fuel composition was quantitatively determined, it is impossible for stakeholders to scrutinize and assess the soundness of the proposal and the validity of the claims and conclusions made by St Marys in the very limited information they have provided to the public (two handouts reflecting the poster board material at the PIC and on the St Marys website).

While there is some reporting of emissions for some contaminants of interest (mercury, dioxins and furans, benzene, cadmium, lead), there was **no information provided for numerous contaminants of interest associated with the proposed undertaking**. While it is stated that source testing was undertaken for an extensive suite of compounds including PM2.5, PAHs, VOCs, Metals, NO_x, Sulphur Dioxide and more, the results of testing for those compounds were not provided. How can the public evaluate the proposal with all the missing information?

Furthermore, in the handout I received, data is missing in the table *Results for Contaminants of Interest* for two of the pollutants for which some emission rates were actually given. Updated POI Concentrations and Percent of Ministry POI Limit were not given for Mercury and TOTAL Dioxin and Furans (TEQ).

Furthermore, for stakeholders to more easily assess the environmental impact of the proposal, predicted total annual emissions of each contaminant should be given in addition to emission rates and concentrations.

Also, the main benefit claim of St Marys is that the ALTF will lower greenhouse gases, yet the emissions data for NO_x, CO and Sulphur Dioxides etc. was not provided. We were told that a Carbon Dioxide Emissions Intensity Report is being prepared, but certainly those preliminary emission values could have and should have been given. Giving them out in time for only the

Second Public Open House is not good enough. As they were not ready, and the Air Quality Study and Cumulative Effects Assessment was not either, stakeholders should be given a third public open house with sufficient time to respond to those studies.

Concerns Regarding the Demonstration Fuel Composition Reflecting Application

Underlying reports quantifying the demonstration fuel composition were not given so the public and other agencies are not able to scrutinize whether the demonstration fuel(s?) tested appropriately reflect what is being contemplated in the proposal.

All that we were given was a general description in the handouts that the ALCFs being considered for permit were “Residuals derived from industrial and/or post-consumer sources, including plastic polymers, paper fibre and woody materials, received as single streams of blends”. That is an extremely broad definition and if a permit was granted for such a broad range of fuel mixtures, one would expect extensive testing of many different permutations and combinations of the alternative fuels contemplated. I am very concerned with dioxin and furan emissions and the amount of chlorine in the fuels being contemplated. I was told by a St Marys staff person that PVC plastic would not be burned as an ALCF, but I see no assurances of that in the documents provided.

How varied were the demonstration fuels? If there was only one type of mixture tested, yet the approval sought contemplates burning a vast array of possible mixtures, the emissions testing done here would clearly be insufficient.

Concerns With Environmental Claims, Competition Against True Zero Waste Initiatives, Lack of Data and Failure to Address Life Cycle Assessment

I am very concerned that the practice of burning municipal garbage is becoming more widespread and is competing with the true zero waste strategies of reduction, reuse, recycling and redesign.

At the Open House, I was informed by staff that some of the plastics St Marys has and intends to burn is plastic water bottles that cannot be recycled because of their colour. This demonstrates my concern is valid. First, there are excellent choices for reusable water bottles these days, and, while I reject single use plastics, there are also plastic water bottles that can be recycled. The solution to tinted water bottles that cannot be recycled is to simply not make them. It is wasteful and polluting to use them as fuel for a cement kiln and it encourages a failure to address the problem at its source. Furthermore, this is not the circular zero waste economy, as the virgin materials, greenhouse gases expended and pollution generated to manufacture the replacement add to our environmental burden yet this essential consideration is completely missing and not contemplated in the St Marys material.

Any valid assessment must contemplate all environmental costs of manufacturing the materials burned as fuels.

Concerns with Lack of Scrutiny and Stakeholder Contact

I am very concerned that, to my knowledge, this proposal has not been posted on the EBR Registry. This affects communities far and wide. Many stakeholders and agencies outside of our local area may not even be aware of this proposal.

Concerns with Cumulative Health Effect on Local Community and Air Quality

I am extremely concerned with the emissions burden St Marys imposes on our local community. The 2017 NPRI data shows that St Marys had the highest nitrogen oxide emissions in Ontario. In addition St Marys emits very high amounts of other respiratory irritants – total particulate matter, PM2.5 sulphur dioxide and other acid gases. Mercury and dioxin emissions are also of grave concern. St Marys already compares with the dioxin and furan emissions of the Durham York incinerator (2017 St Mary emissions were almost 4 times higher (NPRI data)).

The cumulative effect of the total respiratory irritant, dioxin and furan and other toxic emissions is very concerning. You have indicated that you are going to do a Cumulative Impact study, but it was not ready for the first public open house. You must consider doing a third open house so that the public and other agencies have enough time to review it and comment so that you can then adjust it according before delivering a final report. In your cumulative assessment I urge you to rely not only on the MECP limits and criteria as many of those limits, such as those for nitrogen oxides and sulphur dioxides are extremely outdated (1970s) and are not in line at all with recently endorsed CCME standards. I urge you to use updated standards protective of human health in your assessment.

St. Marys identifies potential *benefits* of burning alternative fuels such as reduction of greenhouse gas emissions, reduction of non-renewable fossil fuel consumption and combustion use of materials that would be landfilled, however we are concerned that St. Marys has not adequately identified and assessed the potential *detriments and risks* to the environment and human health in burning the proposed alternative fuel (most notably the increase in toxic emissions to air and environment). St. Marys has failed thus far to provide evidence that burning the alternative fuels would be safe.

We recognize there is a demand for cement and we recognize there will be significant pollution to produce that cement as the production is energy intensive. We also recognize that there are high greenhouse gas emissions and are acutely aware of the need to take measures to address global warming. Gains made in reducing greenhouse gases could very well be far outweighed by future losses to public health and environment through increased emissions/releases of these heavy metals, dioxins and furans and other toxins. . There needs to be a complete and full health risk assessment which would consider all potential impacts before this proposal (and any other) can be considered. Such a health risk assessment would have to include consideration/assessment of the air shed at the site as well as expert medical review of current

research on particulate/dioxin/furan/heavy metal pollution from cement kilns and best practice mitigation and monitoring for cement kilns burning alternative fuels.

I hope that you will consider my concerns and comments fully.

Respectfully submitted,

██████████

Alternative Low Carbon Fuel Use at St Marys Cement Bowmanville Plant Public Meeting / Open House #2 – Comments from [REDACTED]

I have further comments and concerns with the proposal, demonstration, results, and consultation and I have outlined a number of them below. I am also appending the comments and concerns I submitted after the first open house as a number of them remain unaddressed.

My overarching concern is that, while the proposal might result in reducing carbon dioxide emissions, that potential benefit may be far outweighed by potential detriments to the environment and public health through increased emissions and greater toxic burden. There is also the potential undesired outcome that burning of certain ALCFS may also impede and delay true zero waste initiatives.

Concern With Application Under Regulation 79/115 & ALCF Requirements & Description

Slide 6 of the handout given at Open House 2 states that ALCF “Must be wholly derived from (or composed of) materials that are biomass or municipal waste or a combination of both”. Slide 14, however states that “SMCB carried out a demonstration project to use residuals derived from industrial and/or post-consumer sources including plastic polymers, paper fibres and woody materials as ALCFs at the Site” . That statement implies that IC&I waste is being used as ALCF and St. Marys personnel at the Open House confirmed that they would be receiving waste from industries to burn as ALCF. From my reading of Regulation 79/115, however, that Regulation does not seem to provide for such industrial waste. **There needs to be more detailed information given by St. Marys on what they anticipate they are going to burn and there needs to be an explanation of how that material meets Regulation 79/15.** Information needs to be given regarding the sources from where St. Marys is going to get the ALCF, what kind of waste it is and how that waste meets the criterion set out in Regulation 79/15. Further, St. Marys needs to provide details on the quality assurance and testing measures they are going to take to ensure that the ALCF waste meets all regulatory criterion.

St Mary’s Current ECAs would Need to Be Updated with Much More Stringent Limits and Ambient Air Monitoring Must Have Major Improvements

As 30% thermal replacement, St Marys Cement proposes to burn ALCFs which includes residuals derived from industrial and/or post-consumer sources including plastic polymers, paper fibres and woody materials as alternative low carbon fuels. The annual quantities of residuals proposed to be burned by St Marys (information given at both public meetings stated 400 tonnes per day) are almost equivalent to the entire annual capacity of the Durham-York incinerator which currently burns 140,000 tonnes per year.

In burning such a great quantity of industrial and municipal residuals, St Marys becomes both an incinerator and a cement company. Under this proposal, St Marys would move to a more variable feedstock which also has all of the inherent risks (and likely additional risks as some will come from industrial sources) of municipal incineration, yet the ECAs under which St Marys currently operates do not have the same requirements.

The ECAs under which St Marys currently operates are not as stringent as what is required for the Durham York incinerator. The limits are clearly more stringent for particulate matter, lead, mercury, dioxins and furans, hydrochloric acid, and opacity at the DYEC. It is unacceptable that St Marys is proposing to alter their fuel so substantially by burning massive amounts of municipal and industrial residuals without upgrading their ECAs and stack and ambient air monitoring programs accordingly with more stringent limits. This is particularly important for dioxins and furans, heavy metals, halogens, PAHs, chlorobenzenes and chlorophenols and other toxins associated with incineration.

Furthermore, the ambient air monitoring program currently at St Marys is extremely limited with only PM 10 monitoring done. The Durham/York incinerator has ambient air monitoring for PM 2.5, dioxins/furans, metals, and PAHs, however St Marys presently has no ambient air monitoring for any of those pollutants of concern. St Marys' ambient air monitoring program would certainly need to be updated to monitor for these pollutants should they move forward with the more variable ALCF feedstock.

Dioxin and furan emissions are pollutants of great concern with burning municipal waste and any fuel that contains plastics. St Marys already has very significant dioxin and furan emissions and with the new ALCF application proposes to burn more plastics, yet St Marys presently only monitors dioxins/furans for a few hours a year during their annual source test. With their new application which considers ALCF which will vary more widely in content, it is in the public interest for St Mary to install a long term sampling system such as the AMESA system to collect data on dioxin furans in between annual stack tests.

With particulate emissions being very high from St Marys and with PM2.5 emissions being of great concern to the public health, continuous particulate monitoring should be contemplated for the St Marys facility. Such monitoring is available and is required in the European Union for facilities burning municipal waste.

Concerns With Very Limited Scale and Scope of the Demonstration Project, Insufficient Data Set and Insufficient Range of ALCF Blends Considered

I am very concerned with the scope and scale of the demonstration project. St Marys is proposing a MAJOR change to its operations with 30% thermal replacement of their conventional fuel with ALCF for many years to come, yet they are basing their application on **demonstration tests that were done over only a few days and that only considered 2 blends of ALCFs** though there are infinite permutations and combination of ALCF blends that could be burned in the future. Furthermore, it states in the public meeting #1 handout regarding the trials for the two blends, that only Trial 2 data (which considered the second blend of woody residuals and residual plastic from an industrial source unsuitable for recycling) was used for analysis because Trial 1 did not achieve the target substitution rate. So, it appears that only 1 blend with plastics from 1 source were contemplated as demonstration fuel. **This is a woefully inadequate set of data on which to base a major operational change which could have potential detrimental impacts on the environment and public health.**

Concern with Carbon Dioxide Emission Intensity Results

Again, the scope of the study is inadequate with Slide 20 detailing that only three samples of only two types of ALCFs were analyzed.

On Slide 20 it is stated that lower intensity fuel will have lower total carbon content, a higher biological carbon content, and higher heat value. Plastics are a very big part of this proposal and they have a higher heat value. When you burn plastics, however, for industries that continually manufacture and replace those items, thereby incurring all of the carbon intensive activities of virgin extraction of fossil fuels to make them and then to manufacture them, only to burn them as ALCFs once collected back, this very likely does not result in a reduction of carbon dioxide greenhouse gases. **This essential life cycle analysis is completely missing from this proposal and may completely change the presumption that burning ALCFs is beneficial for greenhouse gas reduction.**

Furthermore, for stakeholders to more easily assess the environmental impact of the proposal, predicted total annual emissions of each contaminant should be given in addition to emission rates and concentrations.

Major Concerns with the Assessment of Air Quality Impacts

Slide 22 states that “The study took a very conservative approach.”

It was encouraging that St Marys did attempt to address the public concern of looking at cumulative effects of St Marys, and other sources by looking at the addition of the proposed emissions to the local background.

I do have however some concerns with the analysis and I do have major concerns about the local burden of respiratory irritants including NO₂, SO₂, PM_{2.5} and other toxins, particularly dioxins and furans.

My major concerns with the assessment are:

- 1) As discussed before, the demonstration emission rates used as the input for the emissions dispersion modelling were based on a very limited study that considered only one or two types of ALCF fuel;
- 2) For some of the most sensitive pollutants of concern, concentrations were assessed against very old and outdated standards that are not in line with the newer CAAQs. Even if extensive demonstrations had been done and appropriate modelling completed, if those results in the end are compared to an out of date standard, the impacts on the environment and public health are not adequately assessed nor represented to the public, and certainly it cannot be asserted that the assessment was conservative.

Slide 32 which gives the results of the Cumulative Results shows that:

- There are very significant impacts on PM_{2.5} ambient concentrations predicted with the percentage of the air quality criteria increasing from 72.1% for background to 84.0% with the ALCF.
- There are very significant impact with NO₂ and SO₂. Table 12 of the RWDI Source Testing shows what a great emitter St Marys is and that there WAS statistically

significant increases with the burning of the ALCF fuel with Conventional Fuel Source Test at 77% of the POI Limit and the LCF Source Test at 85% of the POI Limit. Furthermore, Slide 32 shows 1 hour NO₂ emissions increase from background at 5.4% of air quality criteria to 51.4% with the ALCF. And that is 51.4% of the very outdated AAQC of 400 mcg per cubic metre which is from the 1970s. Had the concentration been compared against the updated relevant CAAQ of 100 mcg per cubic metre, the concentration would have been well over the criteria and almost double!! The same results are even more true of SO₂ with concentrations predicted for the ALCF being over three times the Regulation 419 updated for 2023!! We should not be considering a project that adds to an air shed already overburdened. The same is true for other pollutants such as benzene and benzo(a)pyrene.

The pie chart on Slide 31 shows that roughly 30% of the CoPCs increased with the demonstration project, but did not give the public information about which CoPCs increased and by how much. This should have been summarized and made clear for the public. It would also help that the total mass of pollutants emitted each year be given as many are cumulative in the environment. As I asked for a copy of the Source Testing report completed by RWDI, I was able to find some concentrations, however the report was extremely long (over 400 pages) and did not have sufficient explanation in many places.

Further Questions

Will the Consultation Report be posted on the Ministry's EBR Registry?
Will the ALCF Application be posted on the EBR?

Also what appears to be missing from the proposal documents is documentation outlining how St Marys proposes to test the ALCF coming in to the plant and provide quality control on an hourly, daily and yearly basis. What is St Marys doing to ensure the incoming ALCFS meet all regulatory requirements? How often will the testing be done?

March 3, 2020

RE: Alternative Low Carbon Fuel Use at the St. Marys Cement Bowmanville Plant

Dear [REDACTED]

Thank you for submitting your comments and concerns regarding the Alternative Low Carbon Fuel Application for the St Marys Cement (SMC) Bowmanville Plant. The Project Team’s responses to your comments that we received are below in Tables 1 for Public Meeting #2, and Table 2 for Public Meeting #1.

Table 1: Project Team Responses to Comments Received after Public Meeting #2

ID	Comment	Response
1	<p>My overarching concern is that, while the proposal <u>might</u> result in reducing carbon dioxide emissions, that <u>potential</u> benefit may be far outweighed by potential detriments to the environment and public health through increased emissions and greater toxic burden. There is also the potential undesired outcome that burning of certain ALCFS may also impede and delay true zero waste initiatives.</p>	<p>The Ministry of the Environment, Conservation and Parks (MECP) developed the Ontario Regulation (O. Reg). 79/15 Alternative Low Carbon Fuels (ALCF) process to reduce direct greenhouse gas (GHG) emissions by using carbon neutral biomass which also offsets indirect GHG emissions such as mining, transportation and landfill and maintain protection of the natural environment and human health.</p> <p>Under both an approval to use conventional fuels and under an O. Reg 79/15 approval to use ALCFs, a site must remain in compliance with O. Reg 419. With both approvals MECP will include ongoing testing requirements for fuels (ALCFs and conventional fuels) so that ongoing compliance with O. Reg. 419 will be maintained.</p> <p>As presented at Public Meeting / Open House #2 in December 2019 the proposed increase in use of (ALCFs) at the Bowmanville Cement Plant is expected to reduce GHG emissions and is not anticipated to produce negative impacts to the environment. To demonstrate this the following assessments were completed in consideration of the proposed 30% thermal replacement of conventional fuels (coal and petroleum coke):</p> <ul style="list-style-type: none"> • Air Quality Study and Cumulative Effects Assessment; and • Carbon Dioxide Emission Intensity

ID	Comment	Response
		<p style="text-align: center;">Assessment</p> <p>The <i>Air Quality Study and Cumulative Effects Assessment</i> and the <i>Alternative Fuel Demonstration Summary Report</i> were prepared in a conservative manner as explained at Public Meeting #2. Both studies determined that there were no statistically significant changes in kiln stack emissions, ambient concentrations, Point of Impingement (POI) concentrations and cumulative effects as a result of the use of ALCF relative to conventional fuels. Local air quality is anticipated to continue to improve as a result of provincial and international initiatives and SMC is continuing to look into initiatives to reduce emissions.</p> <p>Regarding zero waste initiatives, SMC is committed to respecting the current and future needs of the environment. Unfortunately, there are many materials that are currently being produced every day that cannot be recycled and therefore continue to be destined for landfills. The cost of these materials going to landfills is not only an environmental cost (e.g. release of methane into the environment) but also a community cost (e.g. space available in landfills is becoming more and more limited). By SMC using these materials that have high heat values, we are able to recover the value from those materials and replace the amount of conventional fuels we rely on. This also contributes positively in terms of greenhouse gas reductions, as these ALCFs have a lower carbon dioxide emission intensity than the conventional fuels (coal, petcoke). Wherever possible, SMC is focusing on using locally sourced ALCFs, which are in the best interest of the community, SMC, and the environment. The transportation distances are expected to be much less than the transportation of conventional fuels to the site, along with the environmental impact of relying on the conventional fuels.</p>
2	<p>Concern With Application Under Regulation 79/115 & ALCF Requirements &Description Slide 6 of the handout given at Open House 2 states that ALCF “Must be wholly derived from (or composed of) materials that are biomass or municipal waste or a combination of both”. Slide 14, however states that “SMCB carried out a demonstration project to use residuals derived from industrial and/or post-consumer sources including plastic polymers, paper fibres and woody materials as ALCFs at the Site” . That statement implies that IC&I waste is being used as ALCF and St. Marys personnel at the Open House confirmed that they would be receiving waste from industries to burn as</p>	<p>Municipal Waste as used in O. Reg. 79/15 is defined under Regulation 347 of the Environmental Protection Act as follows:</p> <ul style="list-style-type: none"> (a) Any waste, whether or not it is owned, controlled or managed by a municipality, except, <ul style="list-style-type: none"> (i) Hazardous waste, (ii) Liquid industrial waste, or (iii) Gaseous waste, and (b) Solid fuel, whether or not it is waste, that is derived in whole or in part from the waste included in clause (a).

ID	Comment	Response
	<p>ALCF. From my reading of Regulation 79/115, however, that Regulation does not seem to provide for such industrial waste. There needs to be more detailed information given by St. Marys on what they anticipate they are going to burn and there needs to be an explanation of how that material meets Regulation 79/15. Information needs to be given regarding the sources from where St. Marys is going to get the ALCF, what kind of waste it is and how that waste meets the criterion set out in Regulation 79/15. Further, St. Marys needs to provide details on the quality assurance and testing measures they are going to take to ensure that the ALCF waste meets all regulatory criterion.</p>	<p>O. Reg. 79/15 clearly defines what materials cannot be used as ALCFs under an approval (O. Reg. 79/15 Schedule 1), which includes but is not limited to hazardous waste and waste that that is set-out for recycling programs. SMC will not be taking any of the materials that are prohibited as part of Schedule 1.</p> <p>All ALCF materials are individually vetted by SMC's Alternative Low Carbon Fuel personnel who carefully assess sources of materials for their heat value and compatibility with the plant's system, their chemical composition, and their compliance with permits and approvals at each site.</p> <p>SMC is preparing a Fuel Handling Procedures document which will be submitted to the MECP as part of the Environmental Compliance Approval (ECA) Application. This document will clearly outline the details for quality assurance and testing measures that SMC will be required to follow to meet the regulatory criteria and their ECA Approval, once granted.</p>
3	<p>St Mary's Current ECAs would Need to Be Updated with Much More Stringent Limits and Ambient Air Monitoring Must Have Major Improvements As 30% thermal replacement, St Marys Cement proposes to burn ALCFs which includes residuals derived from industrial and/or post-consumer sources including plastic polymers, paper fibres and woody materials as alternative low carbon fuels. The annual quantities of residuals proposed to be burned by St Marys (information given at both public meetings stated 400 tonnes per day) are almost equivalent to the entire annual capacity of the Durham-York incinerator which currently burns 140,000 tonnes per year.</p> <p>In burning such a great quantity of industrial and municipal residuals, St Marys becomes both an incinerator and a cement company. Under this proposal, St Marys would move to a more variable feedstock which also has all of the inherent risks (and likely additional risks as some will come from industrial sources) of municipal incineration, yet the ECAs under which St Marys currently operates do not have the same requirements.</p> <p>The ECAs under which St Marys currently operates are not as stringent as what is required for the Durham York incinerator. The limits are clearly more stringent for particulate matter, lead, mercury, dioxins and furans, hydrochloric acid, and opacity at the DYEC. It is unacceptable that St Marys is</p>	<p>The MECP developed the O. Reg. 79/15 ALCF process as they recognized that the ALCFs can be used by facilities that are not purposely built to generate Energy from Waste.</p> <p>The Durham York Energy Centre (DYEC) is a different type of facility than SMC's Bowmanville Cement Plant. As stated on the DYEC's website, durhamyorkwaste.ca, the DYEC is a waste management facility that produces energy from the combustion of household waste. SMC's Bowmanville Cement Plant is a cement plant and is applying to use alternative fuel sources, such as ALCFs, to produce quality cement. The process for using ALCFs at a cement plant is different than an incinerator as the materials that can be used are different (e.g. ALCFs to produce cement have to remain compliant with not only MECP regulator requirements but also compliant with the manufacturing process in order to produce quality cement), and the systems are built differently. The cement kiln operates at extremely high temperatures (1,550 °C) and ALCFs cannot be introduced into the kiln during start-up or shut-down procedures when the temperature is not at that point in order to ensure complete combustion of the fuels. The cement kiln also has a long residence time for fuels.</p> <p>SMC is required to amend their ECA for air emissions as part of this application which takes into</p>

ID	Comment	Response
	<p>proposing to alter their fuel so substantially by burning massive amounts of municipal and industrial residuals without upgrading their ECAs and stack and ambient air monitoring programs accordingly with more stringent limits. This is particularly important for dioxins and furans, heavy metals, halogens, PAHs, chlorobenzenes and chlorophenols and other toxins associated with incineration.</p> <p>Furthermore, the ambient air monitoring program currently at St Marys is extremely limited with only PM 10 monitoring done. The Durham/York incinerator has ambient air monitoring for PM 2.5, dioxins/furans, metals, and PAHs, however St Marys presently has no ambient air monitoring for any of those pollutants of concern. St Marys' ambient air monitoring program would certainly need to be updated to monitor for these pollutants should they move forward with the more variable ALCF feedstock.</p> <p>Dioxin and furan emissions are pollutants of great concern with burning municipal waste and any fuel that contains plastics. St Marys already has very significant dioxin and furan emissions and with the new ALCF application proposes to burn more plastics, yet St Marys presently only monitors dioxins/furans for a few hours a year during their annual source test. With their new application which considers ALCF which will vary more widely in content, it is in the public interest for St Mary to install a long term sampling system such as the AMESA system to collect data on dioxin furans in between annual stack tests.</p> <p>With particulate emissions being very high from St Marys and with PM2.5 emissions being of great concern to the public health, continuous particulate monitoring should be contemplated for the St Marys facility. Such monitoring is available and is required in the European Union for facilities burning municipal waste.</p>	<p>consideration the emissions associated with the use of conventional fuels and ALCFs. The updated Emissions Summary and Dispersion Modelling (ESDM) report will demonstrate that the air contaminants will remain below their respective POI limits, annual source testing and ambient PM10 monitoring are the current practices at SMC's Bowmanville Cement Plant to monitor kiln stack emissions and ambient dust levels from all operations including aggregate extraction at the onsite quarry.</p> <p>There are various sizes of particulate matter and each have their own Ambient Air Quality Criteria. PM10 monitoring samples particles less than or equal to 10 micrometers.</p> <p>During the ECA application review process, the MECP will determine what additional monitoring may be required.</p>
4	<p>Concerns With Very Limited Scale and Scope of the Demonstration Project, Insufficient Data Set and Insufficient Range of ALCF Blends Considered</p> <p>I am very concerned with the scope and scale of the demonstration project. St Marys is proposing a MAJOR change to its operations with 30% thermal replacement of their conventional fuel with ALCF for many years to come, yet they are basing their application on demonstration tests that were done</p>	<p>SMC was approved to undertake the time-limited alternative fuels demonstration project under their demonstration ECA to show that SMC can successfully utilize the ALCFs permitted in the ECA to offset a portion of conventional fuel and operate in compliance with MECP regulations. The use of ALCFs is a practice that has been and is being implemented at cement companies globally and across Canada. The results from tests at other plants support the same conclusion as the tests at the SMC</p>

ID	Comment	Response
	<p>over only a few days and that only considered 2 blends of ALCFs though there are infinite permutations and combination of ACLF blends that could be burned in the future. Furthermore, it states in the public meeting #1 handout regarding the trials for the two blends, that only Trial 2 data (which considered the second blend of woody residuals and residual plastic from an industrial source unsuitable for recycling) was used for analysis because Trial 1 did not achieve the target substitution rate. So, it appears that only 1 blend with plastics from 1 source were contemplated as demonstration fuel. This is a woefully inadequate set of data on which to base a major operational change which could have potential detrimental impacts on the environment and public health.</p>	<p>Bowmanville Plant. The Cement Association of Canada provides additional details on the use of ALCFs in cement production https://www.cement.ca/sustainability/</p> <p>Once the ECA for the ALCF process is issued the MECP will include ongoing testing requirements of the ALCF material so that ongoing compliance with O. Reg. 419 will be maintained.</p> <p>The reason that Trial 1 was not used in the comparison for the Demonstration Project as the substitution rate did not meet the target thermal substitution rate required. Modifications to the fuel blend of ALCFs from Trial 1 were discussed with MECP for Trial 2. The fuel blend for Trial 2 averaged at 8.3 tonnes per hour with a maximum rate at 11.97 tonnes per hour. The ALCFs consumed were representative of the blend of the materials that SMC is applying to use as part of this ALCF Application.</p>
5	<p>Concern with Carbon Dioxide Emission Intensity Results Again, the scope of the study is inadequate with Slide 20 detailing that only three samples of only two types of ALCFs were analyzed. On Slide 20 it is stated that lower intensity fuel will have lower total carbon content, a higher biological carbon content, and higher heat value. Plastics are a very big part of this proposal and they have a higher heat value. When you burn plastics, however, for industries that continually manufacture and replace those items, thereby incurring all of the carbon intensive activities of virgin extraction of fossil fuels to make them and then to manufacture them, only to burn them as ALCFs once collected back, this very likely does not result in a reduction of carbon dioxide greenhouse gases. This essential life cycle analysis is completely missing from this proposal and may completely change the presumption that burning ALCFs is beneficial for greenhouse gas reduction.</p>	<p>The <i>Carbon Dioxide Emission Intensity Report</i> followed the sampling and analysis procedures for each of the conventional fuels and ALCFs as outlined in Ontario Regulation 79/15.</p> <p>The samples of ALCFs that were submitted are representative of the composition of ALCFs that SMC is including in their ECA application. SMC will only be recovering the heat value from plastic materials that are destined for landfills (that cannot otherwise be recycled), plastics will not be manufactured for the purpose of using them as ALCFs.</p>
6	<p>Furthermore, for stakeholders to more easily assess the environmental impact of the proposal, predicted total annual emissions of each contaminant should be given in addition to emission rates and concentrations.</p>	<p>The <i>Air Quality and Cumulative Effects Assessment Report</i> includes a table with both hourly and 24 hour maximum concentration of emissions of the key Contaminants of Potential Concern (CoPCs) as the MECP set these to be protective of human health and the environment. The assessment was prepared in a conservative manner, representing worst-case daily emissions (e.g. the kiln is shut-down periodically throughout the year at which times emissions would be zero).</p>

ID	Comment	Response
		<p>SMC is required to report annual emissions through a number of complimentary regulatory requirements and this data will be made available to the public following the reporting year.</p>
7	<p>Major Concerns with the Assessment of Air Quality Impacts Slide 22 states that “The study took a very conservative approach.” It was encouraging that St Marys did attempt to address the public concern of looking at cumulative effects of St Marys, and other sources by looking at the addition of the proposed emissions to the local background. I do have however some concerns with the analysis and I do have major concerns about the local burden of respiratory irritants including NO₂, SO₂, PM_{2.5} and other toxins, particularly dioxins and furans. My major concerns with the assessment are:</p> <ol style="list-style-type: none"> 1) As discussed before, the demonstration emission rates used as the input for the emissions dispersion modelling were based on a very limited study that considered only one or two types of ALCF fuel; 2) For some of the most sensitive pollutants of concern, concentrations were assessed against very old and outdated standards that are not in line with the newer CAAQs. Even if extensive demonstrations had been done and appropriate modelling completed, if those results in the end are compared to an out of date standard, the impacts on the environment and public health are not adequately assessed nor represented to the public, and certainly it cannot be asserted that the assessment was conservative. <p>Slide 32 which gives the results of the Cumulative Results shows that:</p> <ul style="list-style-type: none"> • There are very significant impacts on PM_{2.5} ambient concentrations predicted with the percentage of the air quality criteria increasing from 72.1% for background to 84.0% with the ALCF. <p>There are very significant impact with NO₂ and SO₂. Table 12 of the RWDI Source Testing shows what a great emitter St Marys is and that there WAS statistically significant increases with the burning of the ALCF fuel with Conventional Fuel Source Test at 77% of the POI Limit and the LCF Source Test at 85% of the POI Limit. Furthermore, Slide 32 shows 1 hour NO₂</p>	<p>The results of Air Quality and Cumulative Effects Assessment are considered conservative as the values were overestimated in the following ways:</p> <p>For Cumulative Effects:</p> <ul style="list-style-type: none"> • SMC’s contribution was not subtracted from the background ambient data (i.e. SMC was double counted); • No decrease in future background concentrations was assumed (even though the recent DYEC study predicts lower impacts in the future for many CoPCs, including all of the Key CoPCs); • A high background concentration value was used for short-term averaging periods (90th percentile value). <p>For emissions estimates:</p> <ul style="list-style-type: none"> • All emissions sources were assumed to occur at their maximum achievable rates, all the time. In reality this will not occur. • Even though the demonstration project shows decreases in kiln stack emissions for more than 50% of CoPCs, no decrease was assumed; • Even though the demonstration project showed no statistically significant change in kiln stack emissions, the measured kiln stack emissions for all CoPCs, except for criteria air contaminants, were increased in proportion to the proposed ALCF rate. • The highest of conventional fuel use only, LCF substitution and ALCF substitution emission rates were used for the kiln stack emission rate. <p>For modelling:</p> <ul style="list-style-type: none"> • The absolute maximum modelled concentrations over a 5-year period were compared to the ambient air quality criteria. This is particularly conservative for PM_{2.5} because the reference levels (CAAQS) are based on a three-year average. <p>The results have been presented as maximum concentrations (micrograms per cubic metre) as well as percent of the applicable criteria. Ambient Air</p>

ID	Comment	Response
	<p>emissions increase from background at 5.4% of air quality criteria to 51.4% with the ALCF. And that is 51.4% of the very outdated AAQC of 400 mcg per cubic metre which is from the 1970s. Had the concentration been compared against the updated relevant CAAQ of 100 mcg per cubic metre, the concentration would have been well over the criteria and almost double!! The same results are even more true of SO₂ with concentrations predicted for the ALCF being over three times the Regulation 419 updated for 2023!! We should not be considering a project that adds to an air shed already overburdened. The same is true for other pollutants such as benzene and benzo(a)pyrene.</p> <p>The pie chart on Slide 31 shows that roughly 30% of the CoPCs increased with the demonstration project, but did not give the public information about which CoPCs increased and by how much. This should have been summarized and made clear for the public. It would also help that the total mass of pollutants emitted each year be given as many are cumulative in the environment. As I asked for a copy of the Source Testing report completed by RWDI, I was able to find some concentrations, however the report was extremely long (over 400 pages) and did not have sufficient explanation in many places.</p>	<p>Quality Criteria (AAQC) was used wherever available. In the absence of AAQC standards, Canadian Ambient Air Quality Standards (CAAQS) was used and in absence of AAQC and CAAQS, Jurisdictional Screening Levels were used which are screening levels based on the MECP's review of air quality values of other jurisdictions.</p> <p>With respect to the change in PM_{2.5} concentrations, the 72.1% is ambient background only. As clarified in Table 6-2 of the <i>Air Quality and Cumulative Effects Assessment Report</i>, the existing cumulative effect for PM_{2.5} is the same as future (i.e. 84% for R2) when using ALCFs.</p> <p>With respect to SO₂ and NO₂ results, as indicated in the demonstration report, the change in POIs for these contaminants is a result of the kiln system conditions, not the use of ALCFs/conventional fuels.</p> <p>With respect to the change in NO₂ concentrations, the 5.4% is ambient background only. As clarified in Table 6-2 of the <i>Air Quality and Cumulative Effects Assessment Report</i>, the existing cumulative effect for NO₂ is essentially the same as future (i.e. 0.4% increase at R4) when using ALCFs.</p> <p>With respect to the pie chart on Slide 31 at Public Meeting #2, the change in kiln stack emissions for all contaminants is presented in the demonstration report dated May 2019. Details on the pie chart are indicated on the Slide.</p>
8	Will the Consultation Report be posted on the Ministry's EBR Registry? Will the ALCF Application be posted on the EBR?	The <i>Consultation Report</i> will be made available on the project website and stakeholders will be notified once available. The ALCF Application will be posted on the Environmental Registry by MECP.
9	Also what appears to be missing from the proposal documents is documentation outlining how St Marys proposes to test the ALCF coming in to the plant and provide quality control on an hourly, daily and yearly basis. What is St Marys doing to ensure the incoming ALCFS meet all regulatory requirements? How often will the testing be done?	As indicated in response to ID #2 above, SMC is preparing a Fuel Handling Procedures document which will be submitted to the MECP as part of the ECA Application. This document will clearly outline the details for quality assurance and testing measures that SMC will be required to follow to meet the regulatory criteria and their ECA Approval, once granted.

Table 2: Project Team Responses to Comments Received after Public Meeting #1

ID	Comment	Response
1	<p><u>Concern with Application Under Regulation 79/15</u> The details of the application requirements and rationale for why St Marys is proceeding under</p>	The application process and information on O. Reg 79/15 was included in the Open House displays at both public meetings and Project Team members

ID	Comment	Response
	<p>this new regulation were not given and only very general information was provided.</p> <p>This is a very major change to the operations of St Marys with the operation targeting 30% thermal replacement of conventional fuels. There are potential major environmental and health impacts which have not been adequately acknowledged nor addressed nor evaluated in the small demonstration project St Marys is using to justify the changes to their fueling operations. Such major changes to the fuel warrant a full environmental assessment.</p>	<p>were available to discuss the process if anyone had any questions. SMC decided to proceed with this application under the O. Reg 79/15 process after consulting with MECP. As stated in Table 1, ID #1, above, the MECP developed the O. Reg. 79/15 ALCF process to reduce direct GHG emissions by using carbon neutral biomass which also offsets indirect GHG emissions such as mining, transportation and landfill and maintain protection of the natural environment and human health.</p> <p>The process defined by O. Reg 79/15 has many of the same requirements as preparing a full Environmental Assessment, and SMC has completed additional studies to support this application, such as the Air Quality and Cumulative Effects Assessment, the Acoustics Assessment, the Traffic Impact Study.</p>
2	<p><u>St Mary's Current ECAs would Need to Be Updated with Much More Stringent Limits and Ambient Air Monitoring Must Have Major Improvements</u></p> <p>With 30% thermal replacement, St Marys Cement plant would be burning residuals derived from industrial and/or post-consumer sources including plastic polymers, paper fibres and woody materials as alternative low carbon fuels. The annual quantities of residuals proposed to be burned by St Marys are almost equivalent to the entire annual capacity of the Durham-York incinerator which currently burns 140,000 tonnes per year.</p> <p>In burning such a great quantity of industrial and municipal residuals, St Marys becomes both an incinerator and a cement company. Under this proposal, St Marys would move to a more variable feedstock which also has all of the inherent risks (and likely additional risks as some will come from industrial sources) of municipal incineration, yet the ECAs under which St Marys currently operates do not have the same requirements.</p> <p>The ECAs under which St Marys currently operates are not as stringent as what is required for the Durham York incinerator. The limits are clearly more stringent for particulate matter, lead, mercury, dioxins and furans, hydrochloric acid, and opacity at the DYEC. It is unacceptable that St Marys is proposing to alter their fuel so substantially by burning massive amounts of municipal and industrial residuals without upgrading their ECAs and stack and ambient air monitoring programs accordingly with more stringent limits. This is particularly important for dioxins and</p>	<p>Please see response to ID #3 in Table 1 above. Additionally, in response to this comment a direct link to the Bowmanville Community Relations Committee page of SMC's website was included on the Bowmanville ALCF web page in order to make reviewing further reports about the plant easier, such as the 2018 Compliance Source Testing Program.</p>

ID	Comment	Response
	<p>furans, heavy metals, halogens, PAHs , chlorobenzenes and chlorophenols and other toxins associated with incineration.</p> <p>While Schedule B was provided for one of St Marys ECA Approvals, the public was not provided with what other contaminants St Marys is presently required by the MECP to assess for during stack testing. The Durham York incinerator is required to stack test additional and numerous contaminants under Schedule D of the ECA it operates under, yet the public could not readily compare as St Marys did not supply that information. It is concerning that St Marys did not communicate what parameters are tested under its present Source Testing program and what their intentions are with respect to upgrading that testing now that they are considering burning large quantities of garbage.</p>	
3	<p>Concerns With Scale of the Demonstration Project, Insufficient Information Provided, Incomplete Emissions Inventory</p> <p>I am very concerned that the underlying documents of the demonstration project, including the lab analysis and detailed testing reports, have not been provided. Insufficient information has been provided.</p> <p>Without knowing how extensive the testing was, for what and for how many hours and days, and how the fuel composition was quantitatively determined, it is impossible for stakeholders to scrutinize and assess the soundness of the proposal and the validity of the claims and conclusions made by St Marys in the very limited information they have provided to the public (two handouts reflecting the poster board material at the PIC and on the St Marys website).</p> <p>While there is some reporting of emissions for some contaminants of interest (mercury, dioxins and furans, benzene, cadmium, lead), there was no information provided for numerous contaminants of interest associated with the proposed undertaking. While it is stated that source testing was undertaken for an extensive suite of compounds including PM2.5, PAHs, VOCs, Metals, NO_x, Sulphur Dioxide and more, the results of testing for those compounds were not provided. How can the public evaluate the proposal with all the missing information?</p> <p>Furthermore, in the handout I received, data is missing in the table <i>Results for Contaminants of Interest</i> for two of the pollutants for which some</p>	<p>Please see response to ID #4 in Table 1 above. Additionally, in response to this comment a direct link to the Bowmanville Community Relations Committee page of SMC's website was included on the Bowmanville ALCF web page in order to make reviewing further reports about the plant easier, such as the <i>Alternative Fuel Demonstration Project Summary Report</i> by BCX Environmental Consulting and the <i>Alternative Fuel Demonstration Project Summary Waste Report</i> by HDR.</p>

ID	Comment	Response
	<p>emission rates were actually given. Updated POI Concentrations and Percent of Ministry POI Limit were not given for Mercury and TOTAL Dioxin and Furans (TEQ).</p> <p>Furthermore, for stakeholders to more easily assess the environmental impact of the proposal, predicted total annual emissions of each contaminant should be given in addition to emission rates and concentrations.</p> <p>Also, the main benefit claim of St Marys is that the ALTF will lower greenhouse gases, yet the emissions data for NO_x, CO and Sulphur Dioxides etc. was not provided. We were told that a Carbon Dioxide Emissions Intensity Report is being prepared, but certainly those preliminary emission values could have and should have been given. Giving them out in time for only the Second Public Open House is not good enough. As they were not ready, and the Air Quality Study and Cumulative Effects Assessment was not either, stakeholders should be given a third public open house with sufficient time to respond to those studies.</p>	
4	<p>Concerns Regarding the Demonstration Fuel Composition Reflecting Application</p> <p>Underlying reports quantifying the demonstration fuel composition were not given so the public and other agencies are not able to scrutinize whether the demonstration fuel(s?) tested appropriately reflect what is being contemplated in the proposal.</p> <p>All that we were given was a general description in the handouts that the ALCFs being considered for permit were “Residuals derived from industrial and/or post-consumer sources, including plastic polymers, paper fibre and woody materials, received as single streams of blends”. That is an extremely broad definition and if a permit was granted for such a broad range of fuel mixtures, one would expect extensive testing of many different permutations and combinations of the alternative fuels contemplated. I am very concerned with dioxin and furan emissions and the amount of chlorine in the fuels being contemplated. I was told by a St Marys staff person that PVC plastic would not be burned as an ALCF, but I see no assurances of that in the documents provided.</p> <p>How varied were the demonstration fuels? If there was only one type of mixture tested, yet the approval sought contemplates burning a vast array of possible</p>	<p>In response to this comment a direct link to the Bowmanville Community Relations Committee page of SMC's website was included on the Bowmanville ALCF web page in order to make reviewing further reports about the plant easier, such as the <i>Alternative Fuel Demonstration Project Summary Report</i> by BCX Environmental Consulting and the <i>Alternative Fuel Demonstration Project Summary Waste Report</i> by HDR.</p> <p>SMC is not interested in burning PVCs. Chlorine content impacts cement quality therefore it is always an acceptance criterion. This criterion will inherently limit the type and quantity of plastics accepted.</p> <p>In response to questions we heard a Public Meeting #1, SMC included a list of potential ALCFs at Public Meeting #2 which may include:</p> <ul style="list-style-type: none"> • Paper / paper fibre materials • Cardboard • Cotton • Textiles • Construction and demolition materials • Non-recyclable plastics • Ragger tails from cardboard and paper recycling

ID	Comment	Response
	<p>mixtures, the emissions testing done here would clearly be insufficient.</p>	<ul style="list-style-type: none"> • Packaging material from consumer products • Materials derived from agricultural crop production that cannot be consumed (not including materials derived from animals or animal by-products) <p>Samples of the ALCF materials were also brought to both public meetings / open houses for public to be able to view a typical ALCF mix in a glass jar.</p>
5	<p>Concerns with Environmental Claims, Competition Against True Zero Waste Initiatives, Lack of Data and Failure to Address Life Cycle Assessment</p> <p>I am very concerned that the practice of burning municipal garbage is becoming more widespread and is competing with the true zero waste strategies of reduction, reuse, recycling and redesign.</p> <p>At the Open House, I was informed by staff that some of the plastics St Marys has and intends to burn is plastic water bottles that cannot be recycled because of their colour. This demonstrates my concern is valid. First, there are excellent choices for reusable water bottles these days, and, while I reject single use plastics, there are also plastic water bottles that can be recycled. The solution to tinted water bottles that cannot be recycled is to simply not make them. It is wasteful and polluting to use them as fuel for a cement kiln and it encourages a failure to address the problem at its source. Furthermore, this is not the circular zero waste economy, as the virgin materials, greenhouse gases expended and pollution generated to manufacture the replacement add to our environmental burden yet this essential consideration is completely missing and not contemplated in the St Marys material. Any valid assessment must contemplate all environmental costs of manufacturing the materials burned as fuels.</p>	<p>Please see response to ID #1 in Table 1 above. Regarding zero waste initiatives, SMC is committed to respecting the current and future needs of the environment. Unfortunately, there are many materials that are currently being produced every day that cannot be recycled and therefore continue to be destined for landfills. The cost of these materials going to landfills is not only an environmental cost (e.g. release of methane into the environment) but also a community cost (e.g. space available in landfills is becoming more and more limited). By SMC using these materials that have high heat values, we are able to recover the value from those materials and replace the amount of conventional fuels we rely on. This also contributes positively in terms of greenhouse gas reductions, as these ALCFs have a lower carbon dioxide emission intensity than the conventional fuels (coal, petcoke). Wherever possible, SMC is focusing on using locally sourced ALCFs, which are in the best interest of the community, SMC, and the environment. The transportation distances are expected to be much less than the transportation of conventional fuels to the site, along with the environmental impact of relying on the conventional fuels.</p>
6	<p>Concerns with Lack of Scrutiny and Stakeholder Contact</p> <p>I am very concerned that, to my knowledge, this proposal has not been posted on the EBR Registry. This affects communities far and wide. Many stakeholders and agencies outside of our local area may not even be aware of this proposal.</p>	<p>We are currently in the process of preparing the application. Once the application is complete it will be posted on the Environmental Registry by MECP. Regarding prior notification, in advance of the first and second public meetings, the notices were published in local newspapers across the Region of Durham, copies of the notice were delivered to over 4,000 residents / property owners within (and beyond) a 1 km radius of the property boundary of the site via Canada Post's Neighbourhood mailing, and were distributed to the contact list which included (but is not limited to) municipal and</p>

ID	Comment	Response
		regional staff, elected officials, and any stakeholders who have expressed interest in the study.
7	<p>Concerns with Cumulative Health Effect on Local Community and Air Quality I am extremely concerned with the emissions burden St Marys imposes on our local community. The 2017 NPRI data shows that St Marys had the highest nitrogen oxide emissions in Ontario.</p> <p>In addition St Marys emits very high amounts of other respiratory irritants – total particulate matter, PM2.5 sulphur dioxide and other acid gases. Mercury and dioxin emissions are also of grave concern. St Marys already compares with the dioxin and furan emissions of the Durham York incinerator (2017 St Mary emissions were almost 4 times higher (NPRI data)).</p> <p>The cumulative effect of the total respiratory irritant, dioxin and furan and other toxic emissions is very concerning. You have indicated that you are going to do a Cumulative Impact study, but it was not ready for the first public open house. You must consider doing a third open house so that the public and other agencies have enough time to review it and comment so that you can then adjust it according before delivering a final report. In your cumulative assessment I urge you to rely not only on the MECP limits and criteria as many of those limits, such as those for nitrogen oxides and sulphur dioxides are extremely outdated (1970s) and are not in line at all with recently endorsed CCME standards. I urge you to use updated standards protective of human health in your assessment.</p> <p>St. Marys identifies potential <i>benefits</i> of burning alternative fuels such as reduction of greenhouse gas emissions, reduction of non-renewable fossil fuel consumption and combustion use of materials that would be landfilled, however we are concerned that St. Marys has not adequately identified and assessed the potential <i>detriments and risks</i> to the environment and human health in burning the proposed alternative fuel (most notably the increase in toxic emissions to air and environment). St. Marys has failed thus far to provide evidence that burning the alternative fuels would be safe.</p> <p>We recognize there is a demand for cement and we recognize there will be significant pollution to produce that cement as the production is energy</p>	<p>Please see response to #1 in Table 1 above.</p> <p>Additionally in response to concerns expressed at Public Meeting #1, SMC prepared the Air Quality and Cumulative Effects Assessment to include sources such as the Durham York Energy Centre in a conservative manner. The results of the assessment were presented at Public Meeting #2 and when the report was finalized it was loaded onto the project website and notification was sent to everyone on the contact list. Comments can still be provided by the public during the ECA application process.</p>

ID	Comment	Response
	<p>intensive. We also recognize that there are high greenhouse gas emissions and are acutely aware of the need to take measures to address global warming. Gains made in reducing greenhouse gases could very well be far outweighed by future losses to public health and environment through increased emissions/releases of these heavy metals, dioxins and furans and other toxins. There needs to be a complete and full health risk assessment which would consider all potential impacts before this proposal (and any other) can be considered. Such a health risk assessment would have to include consideration/assessment of the air shed at the site as well as expert medical review of current research on particulate/dioxin/furan/heavy metal pollution from cement kilns and best practice mitigation and monitoring for cement kilns burning alternative fuels.</p>	

Please contact me by phone at 416-366-6999 extension 2211 or by email at sarah_schmied@golder.com if you have any additional questions or comments. You may also wish to contact Ruben Plaza, Corporate Environmental Manager North America, at St Marys Cement at 905-623-3341 or by email at Ruben.Plaza@vcimentos.com.

Respectfully,

Sarah Schmied
 Golder Associates Ltd.
Sarah_schmied@golder.com
 416-366-6999 x2211