



# Plasco Trail Road

Public Meeting  
March 21, 2011



# Agenda

1. Welcome/Introductions
2. Review of Screening Process
3. EA Checklist
  - Purpose
  - Where to comment
4. The Plasco Conversion System
  - 2007- Jan 2011
  - 2011 – Onwards
5. Summary Proposed Future Operations of Plasco Trail Road
6. Emissions Modeling
7. Q&A



# Plasco Trail Road: Permanent Commercial Scale Demonstration and Development Facility



# The EA Screening Process

- Proponent driven process
- Requires consultation with government agencies including the MOE, First Nations, the general public, and other stakeholder groups
- There are 14 steps in the Screening Process. Key elements include:
  - Publication of Notice of Commencement
  - Project Description
  - Screening Criteria Checklist
  - Consultation
  - Publication of an Environmental Screening Report (ESR)
  - Publication of Notice of Completion
  - 60-day public review period of the ESR
  - Submission of Statement of Completion to the Ministry

# The EA Screening Process

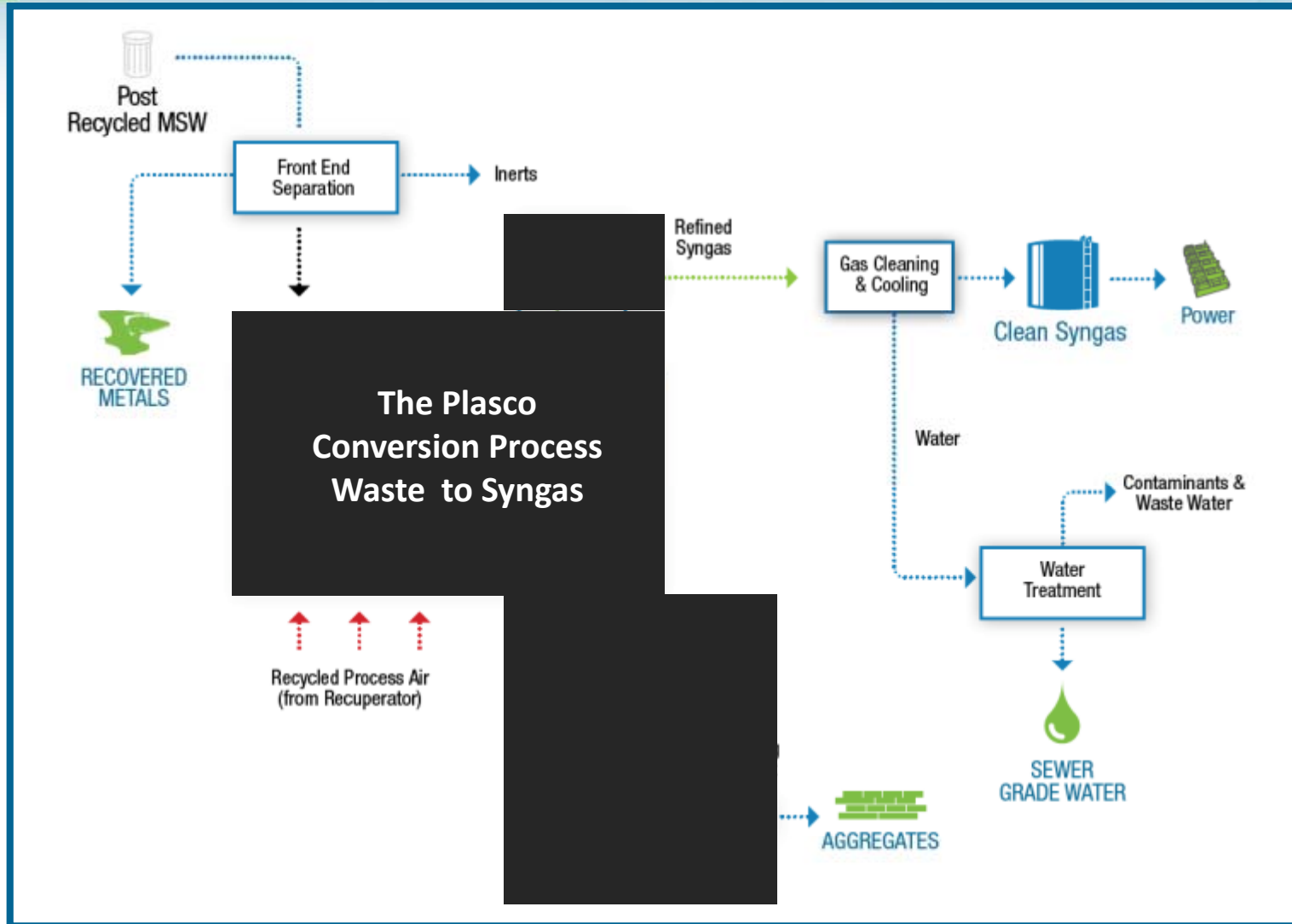
## Screening Criteria Checklist

- The EA Screening Criteria Checklist – storyboards
- Potential environmental issues have been identified – Plasco mitigation detailed
- Plasco invites you to comment using the handout
  - Comment on issues identified
  - Identify gaps and add to list

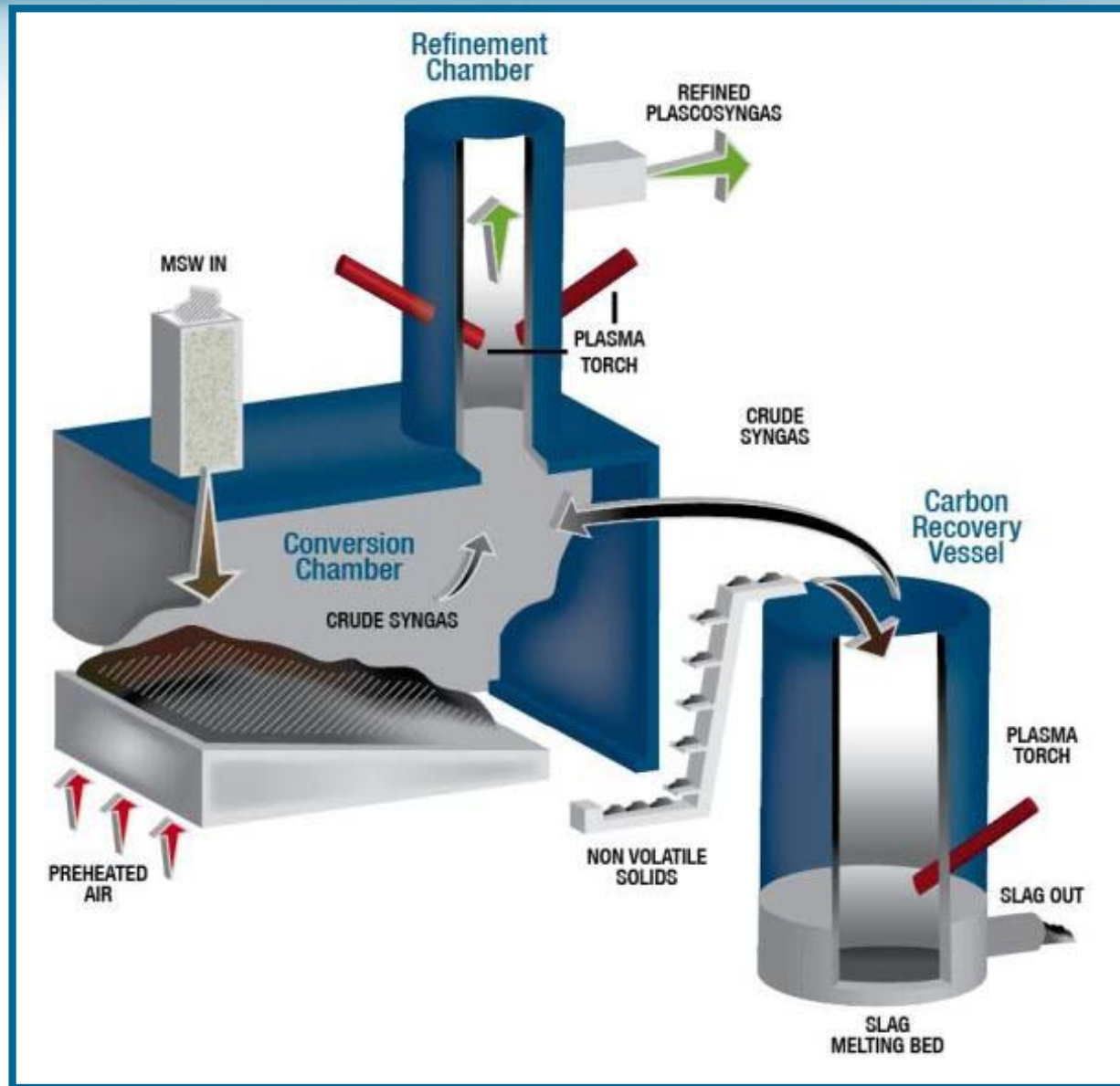
## Public Consultation

To allow the proponent to “identify and consider concerns and issues and to provide interested persons with an opportunity to receive information about and make meaningful input into the project review and development” (MOE 2007).

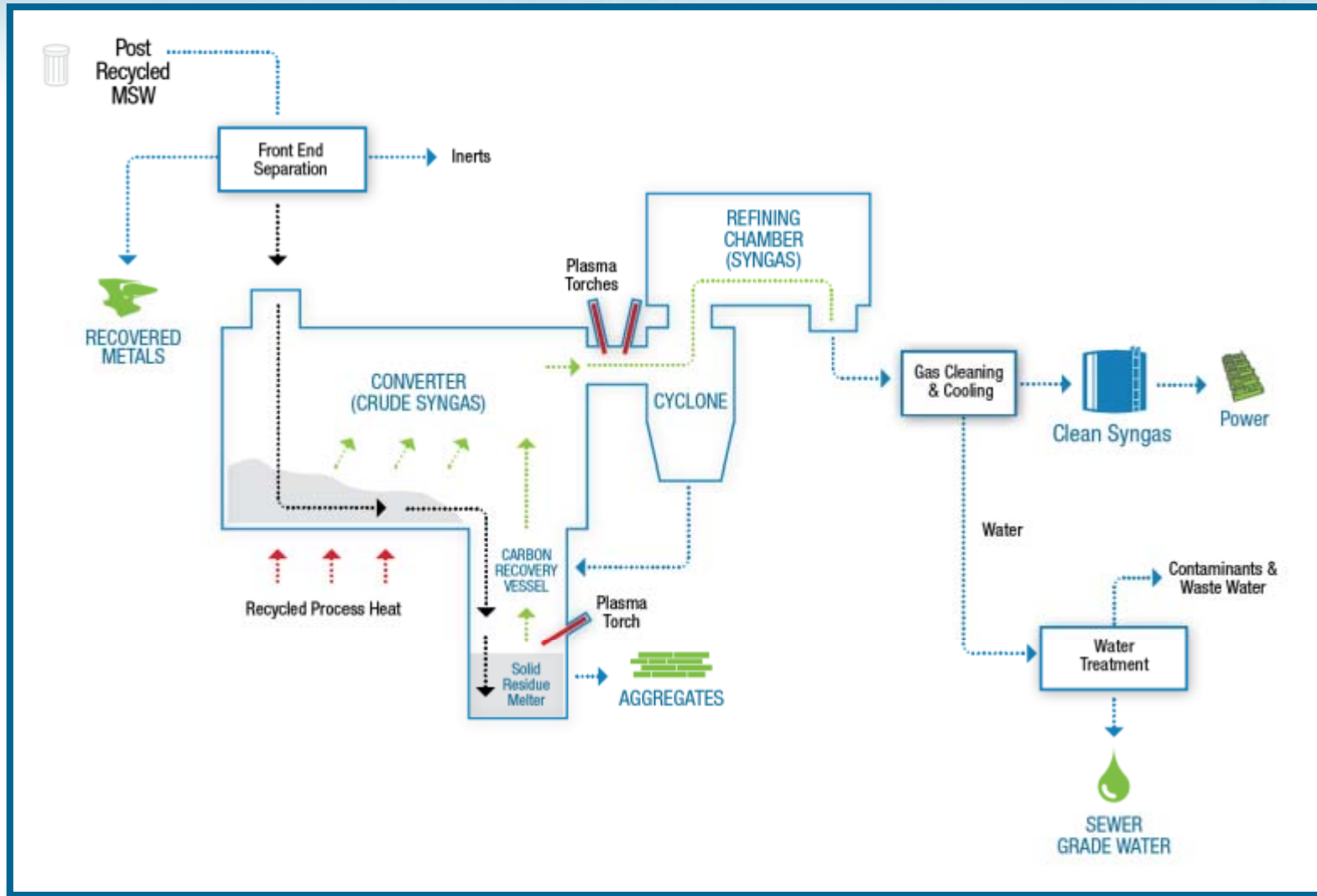
# The Plasco Conversion Process at PTR



# Plasco Conversion and Refining System (2007- January 2011)



# The Plasco Conversion Process with ICARS (2011 – Onward)



# Summary of Upgrades

Item	PTR (2008 – Jan 2011) Demonstration Project	PTR (June 2011 Onward) Permanent Operation
Tonnage	<ul style="list-style-type: none"> <li>Permitted for 85 tonnes per day</li> </ul>	<ul style="list-style-type: none"> <li>ESR study for 135 tonnes per day</li> <li>Initial C of A will be for 85 tonnes per day</li> <li>Subsequent amendments for increased throughput up to 135 tonnes per day</li> </ul>
Truck Traffic	<ul style="list-style-type: none"> <li>Maximum 25 trucks per day (not realized)</li> </ul>	<ul style="list-style-type: none"> <li>25 trucks per day</li> </ul>
MSW Feed System	<ul style="list-style-type: none"> <li>Belt conveyor</li> <li>Gravity feed into converter with a knife gate valve</li> </ul>	<ul style="list-style-type: none"> <li>Extend existing belt</li> <li>Positive displacement ram that will push the MSW into the converter</li> </ul>
Bottom Grate/Ram Fingers	<ul style="list-style-type: none"> <li>3 stages</li> <li>3 airboxes</li> <li>Chain driven, long ram fingers</li> </ul>	<ul style="list-style-type: none"> <li>Multiple stages</li> <li>Multiple airboxes</li> <li>Hydraulically driven short rams</li> </ul>

## Summary of Upgrades (cont.)

Item	PTR (2008 – Jan 2011)	PTR (June 2011 Onward)
Cyclone	<ul style="list-style-type: none"> <li>• Small cyclone tested</li> <li>• Inside the converter</li> <li>• Operated intermittently</li> </ul>	<ul style="list-style-type: none"> <li>• Large cyclone to clean hot gas</li> <li>• Between converter and refining chambers</li> <li>• Will remove the bulk of the particulate material</li> </ul>
Refining Chamber	<ul style="list-style-type: none"> <li>• Vertically positioned over the converter</li> <li>• Plasma torches are located at the base</li> </ul>	<ul style="list-style-type: none"> <li>• Horizontal chamber</li> <li>• Same residence time</li> <li>• Plasma torches are positioned at the inlet</li> </ul>
CRV	<ul style="list-style-type: none"> <li>• CRV shaped to accommodate the converter ash feed system</li> <li>• Air injection system of air boxes with nozzles</li> </ul>	<ul style="list-style-type: none"> <li>• CRV vessel will be positioned below converter</li> <li>• Improved configuration of air distribution nozzles</li> <li>• Multiple injection ports to replace the air boxes</li> </ul>
Ash Feed to the CRV	<ul style="list-style-type: none"> <li>• The ash from the converter is fed into a short screw</li> <li>• Deposited into a long drag conveyor to the CRV</li> </ul>	<ul style="list-style-type: none"> <li>• The ash residue will fall by gravity into the CRV</li> <li>• No screw</li> <li>• No conveyor</li> </ul>
Gas from CRV to the Converter	<ul style="list-style-type: none"> <li>• 80 foot long refractory lined pipe to the converter</li> <li>• Significant heat loss</li> </ul>	<ul style="list-style-type: none"> <li>• CRV and Converter are connected</li> <li>• Gas will flow into converter and on to refining</li> <li>• No heat loss</li> </ul>

# Emissions at PTR

Parameter	Units	Ontario A-7 (2000)	PTR Limits (2008 – 2011)	Ontario A-7 (2010)	Proposed PTR Limits
Particulate Matter	mg/Rm <sup>3</sup>	17	12	14	7
Organic Matter (as CH <sub>4</sub> )	mg/Rm <sup>3</sup>	66	50	33	20
Hydrogen Chloride (HCl)	mg/Rm <sup>3</sup>	27	19	27	5
Sulphur dioxide (SO <sub>2</sub> )	mg/Rm <sup>3</sup>	56	37	56	35
NOx expressed as NO <sub>2</sub>	mg/Rm <sup>3</sup>	207	207	198	120
Carbon monoxide (CO)	mg/Rm <sup>3</sup>	-	-	40	30
Mercury (Hg)	µg/Rm <sup>3</sup>	20	20	20	10
Cadmium (Cd)	µg/Rm <sup>3</sup>	14	14	7	3
Lead	µg/Rm <sup>3</sup>	142	142	60	20
Dioxins and furans	ng/Rm <sup>3</sup>	0.14	0.04	0.08	<0.032

All values are expressed at 11%O<sub>2</sub> and reference conditions (101.3 kPa, 25°C)



# Air Quality

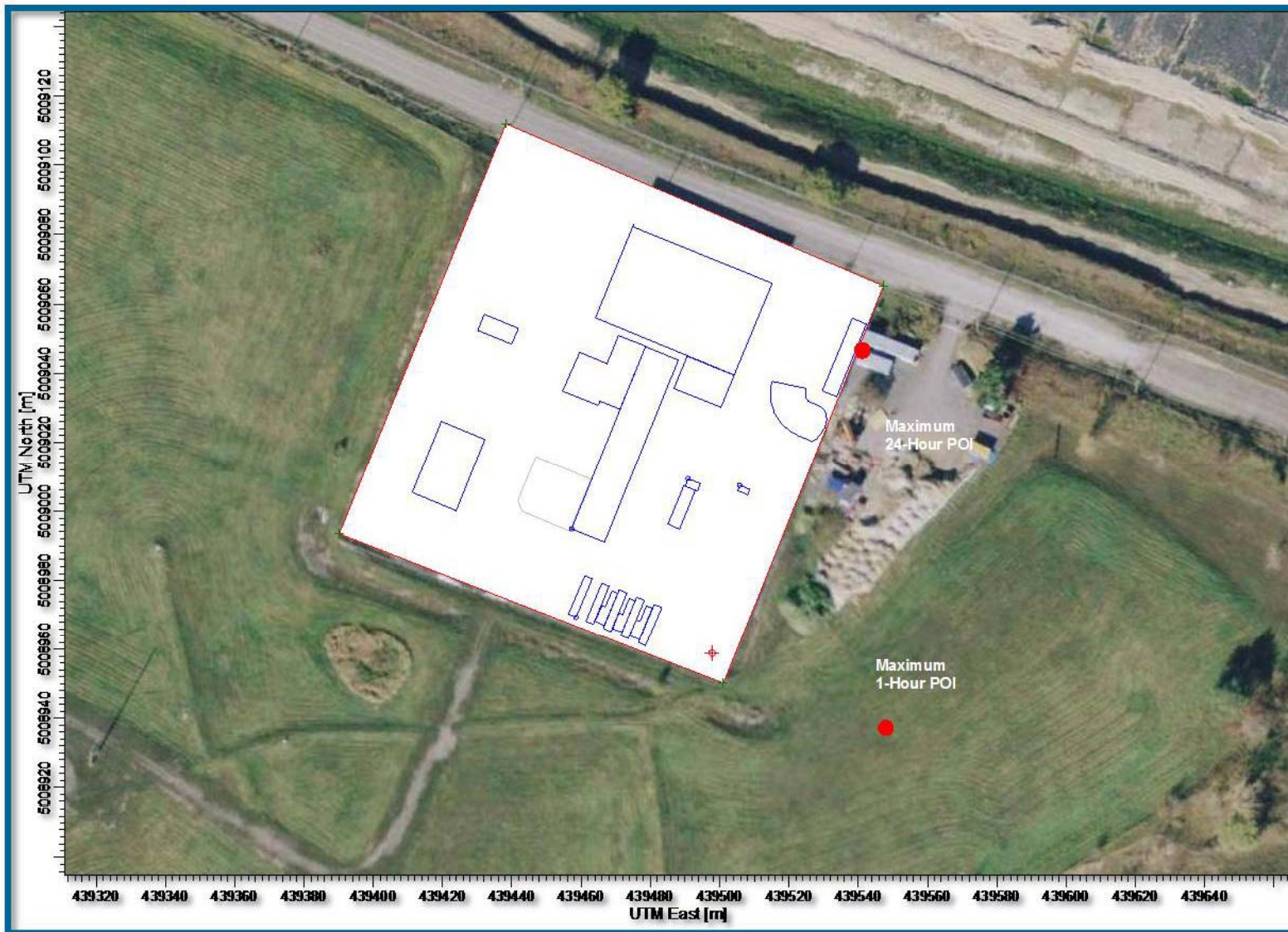
- Air dispersion modeling was completed to predict:
  - The maximum Point of Impingement (POI) concentrations
  - Concentrations of contaminants at the closest community, Barrhaven South
- The worst case emission scenario for air dispersion modeling was defined based on the proposed in-flare maximum emission limits and maximum possible exhaust flowrate through the flare, which could occur at an operational capacity of up to 135 tonnes waste processing per day
- The predicted concentrations were compared with regulatory contaminant limits in O.Reg. 419/05

# Maximum POI Concentrations

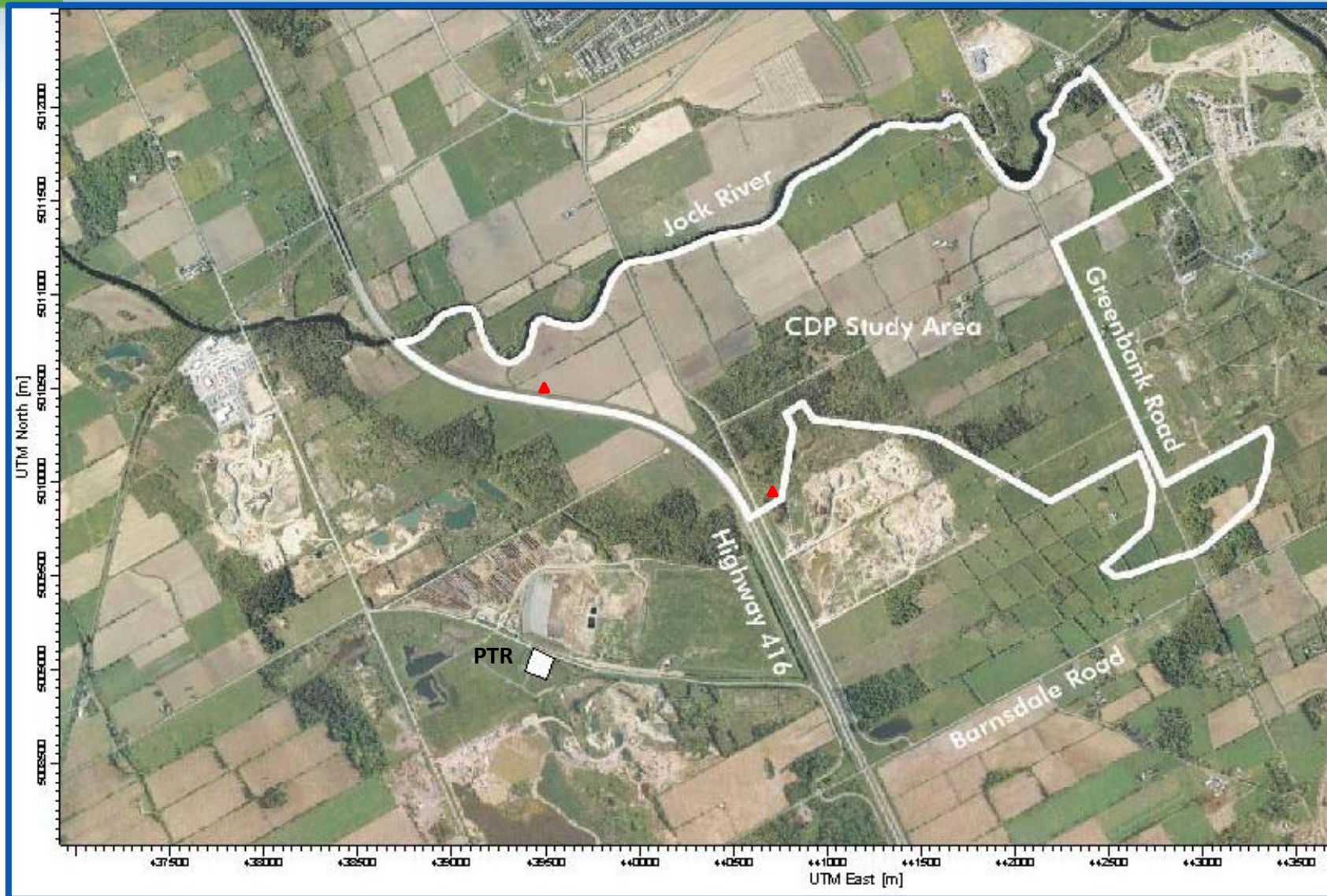
Contaminant	Maximum Emission Rate (g/s)	Maximum POI Concentration ( $\mu\text{g}/\text{m}^3$ )	Averaging Period (hours)	MOE POI Limit ( $\mu\text{g}/\text{m}^3$ )	% of MOE Criteria
<b>NO<sub>x</sub> (as NO<sub>2</sub>)</b>	2.01	350	1	400	<b>87%</b>
		109	24	200	<b>54%</b>
<b>CO</b>	0.496	104	half	6000	<b>2%</b>
<b>SO<sub>2</sub></b>	0.59	123	half	830	<b>15%</b>
		103	1	690	<b>15%</b>
		32	24	275	<b>12%</b>
<b>PM (2.5) *</b>	0.117	6.32	24	25	<b>25%</b>
<b>HCl</b>	0.087	18.2	half	60	<b>30%</b>
		4.71	24	20	<b>24%</b>
<b>Dioxins &amp; Furans</b>	5.33E-10	1.11E-07	half	1.50E-05	<b>1%</b>
		2.89E-08	24	5.00E-06	<b>0.6%</b>
<b>Lead</b>	0.0003	0.0696	half	1.5	<b>5%</b>
		0.018	24	0.5	<b>4%</b>
<b>Mercury</b>	0.0002	0.035	half	5	<b>0.7%</b>
		0.009	24	2	<b>0.5%</b>
<b>Cadmium</b>	0.00005	0.01	half	0.075	<b>14%</b>
		0.002	24	0.025	<b>11%</b>

\* Conservatively, it was assumed all suspended particulate matter is PM<sub>2.5</sub>

# Air Modeling – Location of Maximum POI's



# Air Dispersion Modeling - Location of Barrhaven South Maximum POIs



# Air Modeling Conclusions

- Air emissions from PTR comply with MOE POI standards
- Concentrations of studied contaminants at the nearest community, Barrhaven South development, less than 1% of their corresponding limit (NO<sub>x</sub> < 5%)

## Plasco Will:

- Continue to monitor and report SO<sub>2</sub>, HCl, NO<sub>x</sub> and TOC using continuous emissions monitoring
- Perform source testing for regulated Test Contaminants (such as dioxins and furans, mercury, lead, cadmium and particulate matter)
- Employ best practices to maintain lowest possible emissions

# Plasco Welcomes Your Feedback

- Comments and questions are welcome throughout the Environmental Assessment Screening Process
- All comments and questions will be documented as part of the consultation program for the Project
- Plasco will attempt to address comments and questions to the best of their ability and in a timely manner
- To submit your comments and questions -
  - Fill out a comments form at this meeting,
  - Call or email Andrea Foottit at 613-591-9438 or [afoottit@plascoenergygroup.com](mailto:afoottit@plascoenergygroup.com)



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