



# Environmental Open House

May 26, 2011

Presentation Material




# Environmental Open House

## May 26, 2011




### Current Air Emission Control Systems


**Cokemaking**



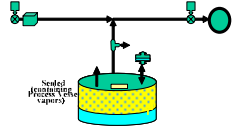
#7 Battery Pushing



Applying dust controls on coal pile



#8 & #9 Battery Pushing Emission Control System



Benzene emission controls

**Ironmaking**



#7 Blast Furnace Baghouse




Dekish Portable Baghouse




Desulphurizing Station Baghouse


**Steelmaking**




Hot Metal Transfer Baghouse



Secondary Emission Control Baghouse




CAS-OB Process Baghouse



Primary Gas Cleaning Plant Wet Scrubber

**Air Quality Monitoring Sites**



- Dustfall Sampler Wilding Avenue
- Air Quality Monitoring Station, Wallace Terrace
- Dustfall Sampler Pittsburg Avenue
- Meteorological Station, #4 Gate, Goullas Avenue
- Dustfall Sampler Bonney Street
- Benzene & PAH Sampler Bonney Street
- Meteorological Station, Patrick Street
- Air Quality Monitoring Station, Patrick Street
- Dustfall Sampler Adelaide Street
- Benzene & PAH Sampler Desulphurization Building
- Benzene & PAH Sampler Administration Building

**Road Dust Maintenance**



Flushing roads



Street Sweeper



Applying Dust Suppressants



Road paving program



Street Flusher

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### Air Quality Program – Building on Progress



Coal Pile Dust Management



Road Dust Management



Road Sweeper



Dekish Station Portable Baghouse

- #7 Blast Furnace Baghouse
- #6 Blast Furnace Baghouse (on hold)
- #2 BOSP Ladle Metallurgy Furnace/Post Tap Baghouse (on hold)
- #2 BOSP Hot Metal Transfer Baghouse upgrade
- Coal Pile Dust Management
- Road Dust Management
- Site Greening
- Portable Baghouse Rentals
- Lime Plant Baghouse Upgrade
- Dekish Portable Baghouse
- CAS-OB Baghouse Upgrade
- Secondary Emission Control Baghouse Upgrade



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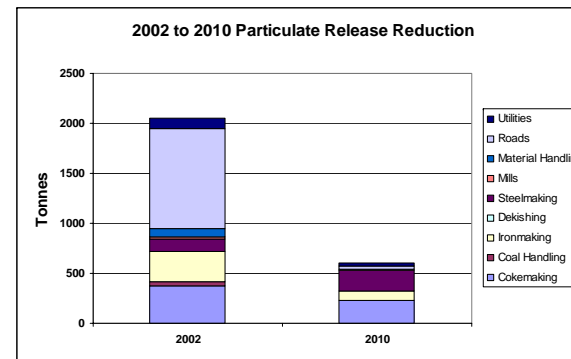
Air Quality Program – Building on Progress



Construction of Berm along south side of coal field



#7 Blast Furnace Baghouse



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### Co-Generation -- Air Quality Improvements

Essar Power Canada Co-Generation - 2010  
GHG and NOx Offsetting Benefits/Site Reduction

EPC		From Coal-Fired Sources		Site Specific	
		Provincial GHG OFFSET	Provincial NO2 OFFSET	NO <sub>2</sub>	
Year	Hours of Operation	MWhr	GHG (Tonnes)	NO2 (Tonnes)	tonnes
2010	8760	537,506	473,005	1,363	713



Essar Power Co-Generation Facility

#### Co-Gen Facts

- Commissioned in June, 2009
- A 70 MW combined heat and power facility
- Two 375,000 lb/hr high efficiency boilers and a 105 MW capacity turbine
- Reduces Essar's reliance on Provincial power grid by 50% on average
- Employs Low-NOx burner technology on the boilers
- Converts byproduct fuel previously flared to cogeneration fuel
- First integrated steel facility in Canada to construct a byproduct fueled cogeneration facility



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Noise Reduction Project for 2011



Install an 8 foot high noise attenuation wall from the existing Tenaris Wall at Goetz Street along Bonney Street on top of the existing berm to Goulais Avenue then to Glasgow Street.



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### Terms and Conditions of Certificate of Approval #3614-82DLFY No. 6 Blast Furnace Baghouse

#### Completed Items

- Ensure that noise emissions from the equipment comply with the limits in NPC 205.
- The Company shall not produce any "green" coke in its existing cokemaking plant in the facility and the production level of the cokemaking plant shall not increase above 84,480 tonnes per month.
- The Company shall maintain and operate the portable baghouse and flame suppression system, when No. 6 Blast Furnace is in operation until the permanent baghouse is installed and operational.
- The Company shall limit the operation of the No. 6 Blast Furnace to 78,610 tonnes of iron per month (approximately 80%) until the permanent baghouse is installed and operational.
- The Company shall obtain a Certificate of Approval (Air) from the Director for the construction, installation and operation of the new ladle metallurgical furnace complete with new baghouse before its construction, installation or operation.
- The Company shall ensure the equipment is properly operated and maintained at all times.
- The Company shall update, as necessary, the Fugitive Dust Management Plan.
- The Company shall make public an environmental complaint hotline on the environment page of its corporate website. The company shall notify the District Manager of each environmental complaint.
- The Company shall post in its corporate website all incidences with environmental impacts related to process upsets, failure of any equipment, within 24 hours of the occurrence.
- The Company shall retain, for a minimum of two years, records and information required by this certificate.
- The Company shall make the current Executive Summary and Emission Summary Table of the current Emission Summary and Dispersion Model report and the results of ambient air monitoring available for inspection.
- The Company shall include contact information, a six month history of public concerns, a three month history of environmental incidences and results of monitoring for benzene and PAH on its existing environmental website.
- The Company shall maintain operation of the Community Liaison Committee.

#### Items in Progress

- The Company shall install and operate individual oven pressure controls on No. 9 coke oven battery on or before October 31, 2011.
- The Company shall install and operate door and jamb cleaners on No. 7 coke oven battery before June 30, 2011.
  - ❖ Alternative procedures are under development as temporary measures.



# Environmental Open House

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### Community Liaison Committee

Established 2008

#### Membership

Essar Steel Algoma (2)	Jerry Suurna, Jerry Freiman
City of Sault Ste Marie (1)	Don Elliot, Susan Hamilton Beach (Alternate)
Public Community	David Trowbridge, Ildiko Horvath (Alternate), Patt Marquis, Kathy Brosemer (Alternate)
Algoma Public Health (1)	Sherry Cleaves, Kara Flannigan (Alternate)
Chippewa County Health Department (1)	Dave Martin, Christine Daley (Alternate)
Ontario Ministry of the Environment (1)	Blair McLaughlin, Ron Dorscht (Alternate)
Batchewana First Nations (1)	Dan Sayers Jr.
USW Local Union 2251 (1)	Rainer Schmitt, Bill Denny (Alternate)

#### Mandate

- To provide a forum for the communication of relevant environmental information to the public, facilitating communication as necessary between the community and the company with respect to the environment.
- Keep the community informed about the operations of the facility in relation to the requirements of Certificates of Approval
- Keep the company informed of any community concerns about the operations of the facility
- Serve as a forum for dissemination, review and exchange of information related to the facility

For further information the meeting notes of the CLC meetings are posted on the Essar Steel Algoma website:

<http://www.essarsteelalgoma.com/company/environment/community-liaison-committee/>

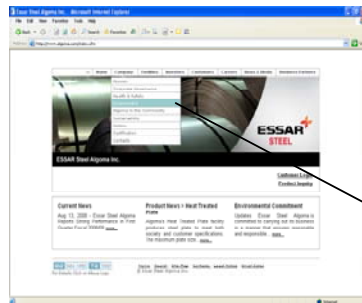
Contact    Jerry Suurna; 705-945-2371    jerry.suurna@essar.com  
              Jerry Freiman; 705-945-2437    jerry.freiman@essar.com



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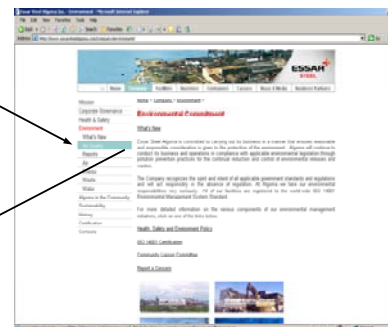


## Air Quality Data



Air Quality Data is reported on Essar Steel Algoma's web site.

To see the latest hourly information, select Air Quality from the menu selection on the Environment page.



**Air Quality Data**

Essar Steel Algoma Inc. monitors air quality through two ambient air quality monitoring stations maintained by the company. The values are based on real-time readings and are of general interest, and do not represent the full monitoring data set.

Click on this link to view a Google Map of the location:

The values continuously monitor the key air quality parameters:

**PM10 or "Total Suspended Solids"**  
The Ministry of Environment defines an hourly ambient for PM10 as all particulates per cubic meter for a one hour period.

**PM2.5 or "Fine Particulate Matter"** - The original Ministry of Environment reports hourly air quality data for PM2.5 as 24-hour average per cubic meter for a 24-hour period.

The following table shows the current data:

Parameter	Location	Units	Value
PM10	Station 1	micrograms per cubic meter	4
PM2.5	Station 1	micrograms per cubic meter	26
SO2	Station 1	parts per billion by volume	0
NO2	Station 1	parts per billion by volume	114
CO	Station 1	parts per million by volume	0
NOx	Station 1	parts per billion by volume	0
Air Temperature	Station 1	degrees Celsius	23

**All Air Quality Information is Reported Online to:**

Parameter	Location	Units	Value
PM10	Station 2	micrograms per cubic meter	0
PM2.5	Station 2	micrograms per cubic meter	0
SO2	Station 2	parts per billion by volume	0
NO2	Station 2	parts per billion by volume	0
CO	Station 2	parts per million by volume	0
NOx	Station 2	parts per billion by volume	0
Air Temperature	Station 2	degrees Celsius	23

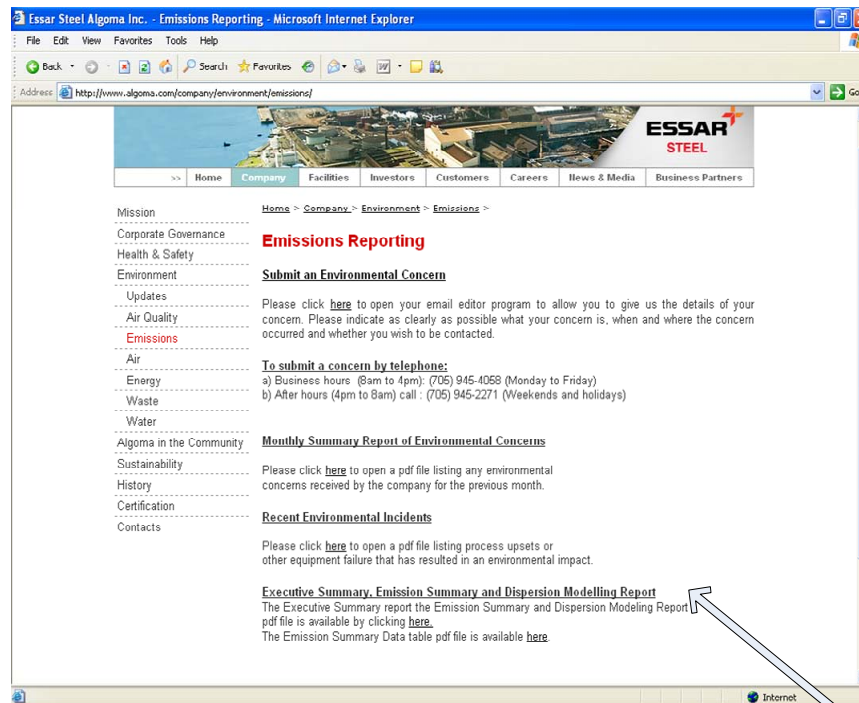
Note:  
 (1) PM10 average is based on a 24-hour rolling average period.  
 (2) Hourly average and hourly peak are based on all of the instantaneous samples of particulate matter and wind speed sampled each hour.

The Air Quality button will open a new page with the previous hour's data.  
Additional information on all monitored parameters will be posted as it becomes available to the company.

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## Emission Summary and Dispersion Model



- ✓ The Emission Summary and Dispersion Model (ESDM) models the total air emissions from the Essar Steel Algoma steelworks facility based on assumed maximum operating levels.
- ✓ The process includes:
  - A) Monitoring current air quality emissions (ongoing).
  - B) Refining universal emission factors for specific site conditions i.e. asset configuration, geography, wind patterns (ongoing).
  - C) Modelling impacts based on A & B (ongoing).
  - D) Conducting Technology Benchmarking Study (Complete).
  - E) Developing a plan and implementing best practices (in Progress).
- ✓ The Executive Summary provides an overview of the Emission Summary and Dispersion Modeling (ESDM) report.
- ✓ The Summary Table provides the raw data tables generated for the ESDM.
- ✓ Both of these documents are available to the public for review on the Essar Algoma internet site [www.essarsteelalgoma.com](http://www.essarsteelalgoma.com).

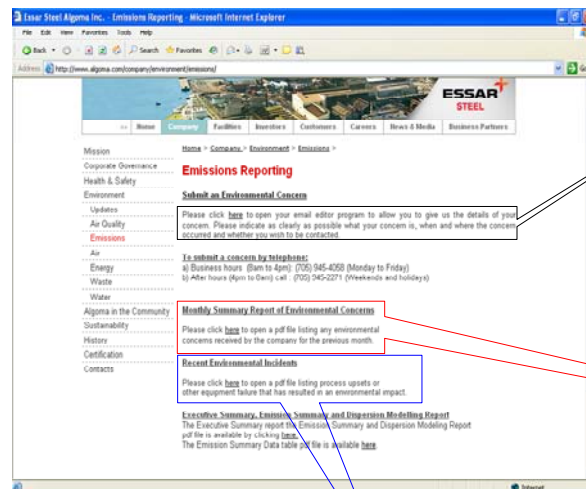
Click on the links within this paragraph to open a PDF document of the current Emission Summary and Dispersion Model Report or a PDF document of the Emissions Summary Table, listing the various parameters modelled.

# Environmental Open House

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### Public Reports



This area describes how to contact Essar Steel Algoma with your concern

- Email to [environment@algoma.com](mailto:environment@algoma.com)
- Call Environment, Health and Safety
- Call Emergency Services – (After Hours)

Click on the link within this paragraph to open a PDF document listing any public concerns that have been received by Essar Steel Algoma.

Click on the link within this paragraph to open a PDF document listing any process upsets or equipment failures at Essar Steel Algoma that have resulted in an environmental impact.

### Sample reports

ESSAR STEEL 2010 Environmental Incidents Resulting from Process Upsets		
The following table lists the environmental incidents reported process upsets for August 2010.		
Incident	Description of the Incident	Resolution
Incident 1	Water treatment system failure	Water treatment system was repaired and the water was treated to meet the required standards.
Incident 2	Exhaust stack emission control system failure	Exhaust stack emission control system was repaired and the emissions were reduced to meet the required standards.
Incident 3	Waste management system failure	Waste management system was repaired and the waste was managed in accordance with the required standards.

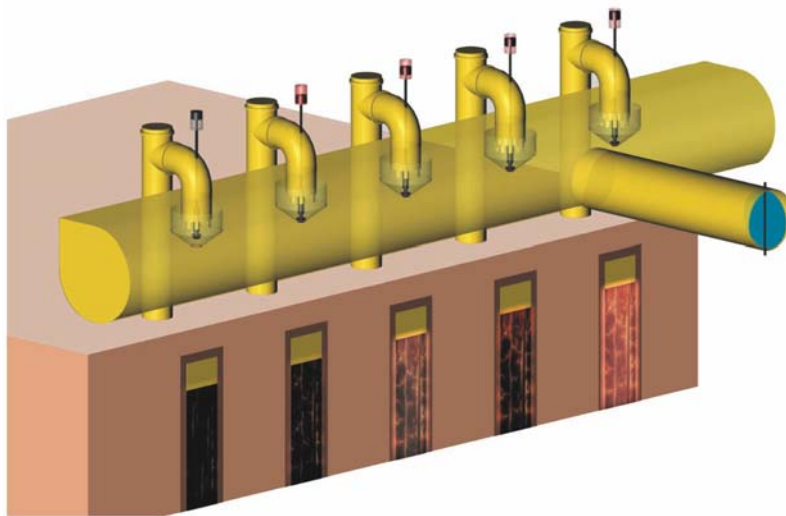
ESSAR STEEL 2010 Environmental Compliance Register		
Public Complaints received during August 2010		
Date	Source of the complaint	Resolution
August 1, 2010	Local resident	Local resident reported a noise complaint. The noise was investigated and found to be within the required standards.
August 5, 2010	Local resident	Local resident reported a water quality complaint. The water quality was investigated and found to be within the required standards.
August 10, 2010	Local resident	Local resident reported a water quality complaint. The water quality was investigated and found to be within the required standards.
August 15, 2010	Local resident	Local resident reported a water quality complaint. The water quality was investigated and found to be within the required standards.
August 20, 2010	Local resident	Local resident reported a water quality complaint. The water quality was investigated and found to be within the required standards.
August 25, 2010	Local resident	Local resident reported a water quality complaint. The water quality was investigated and found to be within the required standards.
August 30, 2010	Local resident	Local resident reported a water quality complaint. The water quality was investigated and found to be within the required standards.

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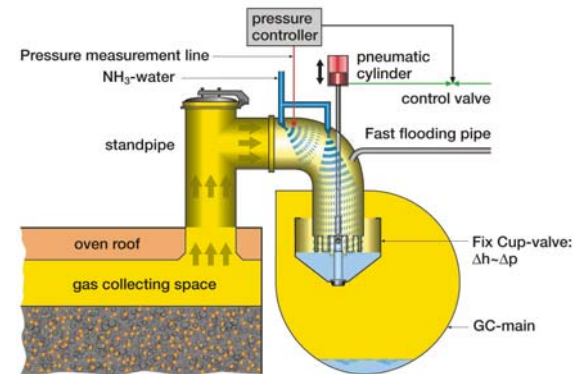
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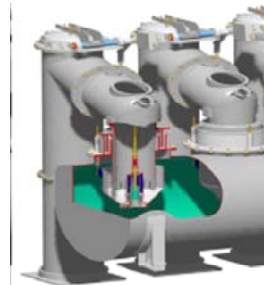
### Reducing Cokemaking Emissions: Individual Oven Pressure Control System Conceptual Layout



Investment  
\$20  
Million



- ✓ Best available technology for slot ovens.
- ✓ Reduce current Battery B(a)P release by > 70%.
- ✓ Reduce current Battery Benzene by >70%.
- ✓ To be installed by October 31, 2011.
- ✓ First Installation in North America



3D Cutout of Gas Collecting Main, Gooseneck and PROven System



PROven Test Facility

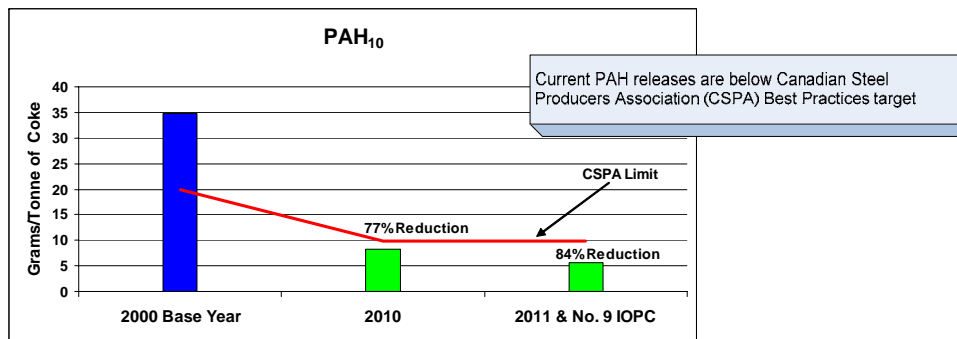


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### Reducing Cokemaking Emissions: Polycyclic Aromatic Hydrocarbons (PAH<sub>10</sub>)



Trial IOPC Oven

Planned actions to further reduce emissions:

✓ Install Individual Oven Pressure Controls (IOPC) on No. #9 Battery by October 31, 2011.

✓ Automatic door and jamb cleaners on No. 7 battery.

✓ Request for extension has been submitted to the MoE

Interim Measures to be implemented during the extension period.

- Enhanced Door Cleaning
- Consistent Application of Silicate on Door Jamb and Chuck Doors
- Continued adherence to CSPA Best Practices and Auditing
- Enhanced Door Replacement
- Enhanced Masonry Jamb Repairs

Total  
Investment  
\$28 million

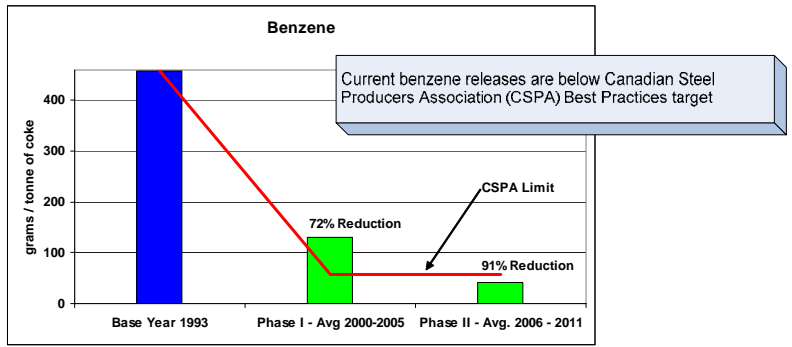


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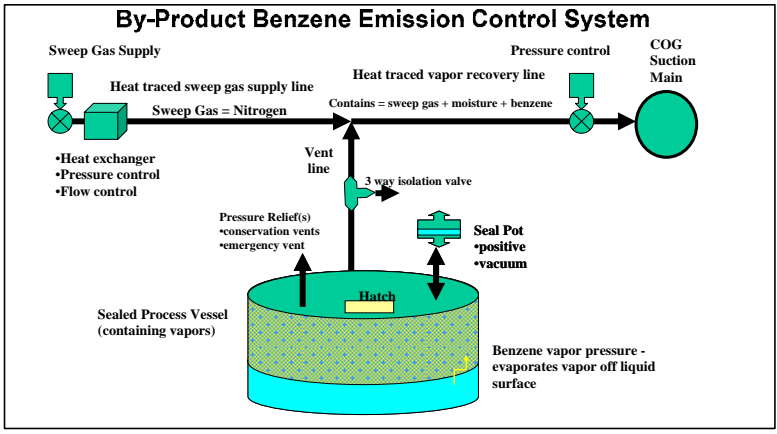
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### Reducing Cokemaking Emissions: Benzene



Total Investment  
\$4 million



- Planned actions to further reduce emissions:
- Expand existing vapour collection system at Cokemaking/By-Product Plant.
    - 2 Decanters
    - 1 Operating Process Tank
    - 1 Operating Tar Tank



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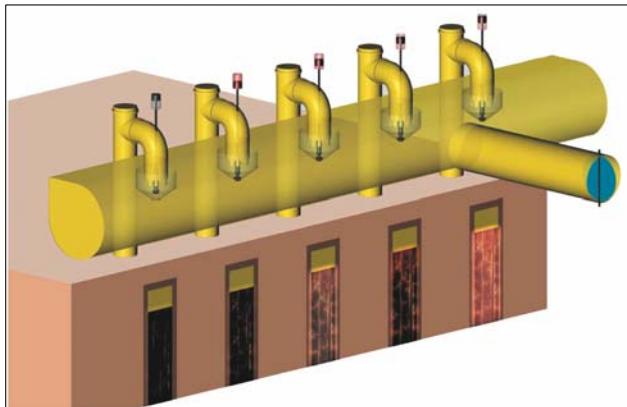


### Reducing Cokemaking Emissions: Site Specific Standards / Technical Standards For Benzene and Benzo(a) pyrene (PAH)

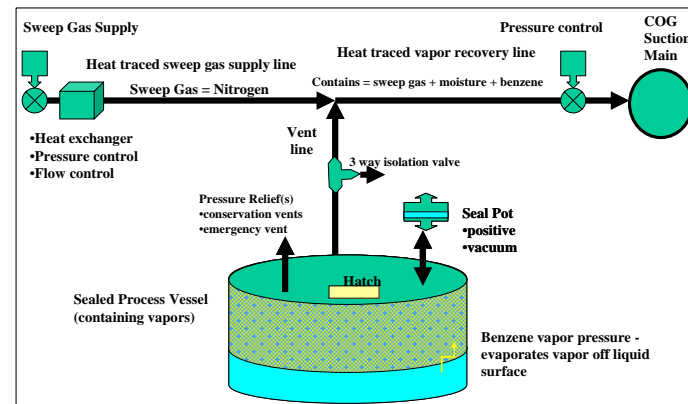
For Benzene and B(a)P, regulated emission technical standards do not currently exist. Essar Steel Algoma is working proactively with the Ministry of Environment to establish Site Specific / Technical Standards for these compounds.

The process includes:

- Monitoring current air quality emissions (ongoing).
- Refining emission factors for specific site conditions i.e. asset configuration, geography, wind patterns (ongoing).
- Modelling impacts based on A & B (ongoing).
- Conducting Technology Benchmarking Study (Complete).
- Additional Standard Setting activity includes development of a Technical Standard for Cokemaking and By-Product Operations.



Individual Oven Pressure Controls



Benzene Emission control systems

