

**Facility Profile Report**  
**Facility Name: Cleveland Public Power - Ridge Rd**  
**ID: 1318008750**

- **Facility Information**

Facility ID: 1318008750

FacilityName: Cleveland Public Power - Ridge Rd

Facility Description:

Address1: 3227 Ridge Rd

Address2:

City: Cleveland

State: Ohio

Zip Code: 44413

County: Cuyahoga

2nd Notification County:

Portable:

Portable Group Name:

Portable Group Type:

Operating Status: Not Installed

Permitting Classification: NONE

PER Due Date: None

Transitional Status: None

Title V Permit Status: None

Title V Certification Report Due Date:

Anticipated Emissions Reporting NONE  
Category for 2011:

Core Place ID: 134169

Intra State Voucher Flag:

Federal SCSC ID

Latitude(deg,min,sec): ( 41.0, 27.0, 22.648315)

Longitude(deg,min,sec): (-81.0, 44.0, 0.70129395)

- **Notes**

User Name	Date	Note

- **PER Due Dates**

Due Date	Effective Date
None	12/31/1969

- **Yearly Emissions Reporting Category**

Year	Category	Enabled	Status	Comment

- **SIC Codes**

- **NAICS Codes**

221119 Other Electric Power Generation  
562213 Solid Waste Combustors and Incinerators

- **Contacts**

Contact Type	Contact Person	Phone Number	Email	Start Date	End Date
Owner	Henderson, Ivan	(216) 664-2708	ihenderson@cpp.org	03/11/2011	
Primary	Henderson, Ivan	(216) 664-2708	ihenderson@cpp.org	03/11/2011	
Billing	Tien, Peter	(973) 317-9001		03/11/2011	

Responsible Official	Withers, Barry	(216)664-5602	barry_withers@ clevelandwater .com	03/11/2011	
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Contact Detail For : Henderson, Ivan

Prefix: First Name: Ivan  
Middle Name: Last Name: Henderson  
Suffix:  
Company Title: Operating Company Name:  
Address 1: 1300 Lakeside Avenue  
Address 2:  
City: Cleveland Zip Code: 44114  
State: Ohio  
Work Phone No: (216)664-2708 Secondary Phone No.:  
Address 2: Secondary Ext. No.:  
Mobile Phone No.: Pager No.:  
Fax No: Pager PIN No.:  
Email: ihenderson@cpp.org  
Email Pager Address:

Contact Detail For : Tien, Peter

Prefix: First Name: Peter  
Middle Name: Last Name: Tien  
Suffix:  
Company Title: Operating Company Name:  
Address 1: 1120 Chester Avenue  
Address 2:  
City: Cleveland Zip Code: 44114  
State: Ohio  
Work Phone No: (973)317-9001 Secondary Phone No.:  
Address 2: Secondary Ext. No.:  
Mobile Phone No.: Pager No.:  
Fax No: Pager PIN No.:  
Email:  
Email Pager Address:

Contact Detail For : Withers, Barry

Prefix: First Name: Barry  
Middle Name: Last Name: Withers  
Suffix:  
Company Title: Operating Company Name:  
Address 1: 1201 Lakeside Avenue  
Address 2:

City: Cleveland

Zip Code: 44114

State: Ohio

Work Phone No: (216)664-5602

Secondary Phone No.:

Address 2:

Secondary Ext. No.:

Mobile Phone No.:

Pager No.:

Fax No:

Pager PIN No.:

Email: barry\_withers@clevelandwater.com

Email Pager Address:

- **Federal Rules Applicability**

Subject to MACT:

Subject to PSD:

Subject to NESHAPS:

Subject to non-attainment NSR:

Subject to NSPS:

Subject to 112(r):

Subject to Title IV:

- **Allowable Emissions (Facility level)**

Pollutant	Pounds/Hour rate	Tons/Year rate
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- **Attachments**

Description	Type	Modified By	Modified Date
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# Emission Unit : TMP166497

Mar 17 2011, 12:38:12

## - Emission Unit Information

DAPC Emissions Unit ID: TMP166497

DAPC Description:

Company Equipment ID: MSW Pre-Processing

Company Description: Processing equipment to extract recyclable materials (e.g., glass, ferrous metals, non-ferrous metals, etc.) and prepare the MSW feedstock for use in the Kinsei Sangyo batch gasifiers.

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Insignificant

Exemption Status: Permit Exempt

Boiler/Turbine/Generator Design Not Applicable  
Capacity:

Design Capacity Units:

ORIS Boiler ID:

## - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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## - Processes

### - Emission Process Information

Process ID: MSW Processing

Company Process Description: MRF Equipment

Source Classification Code (SCC): 3-99-999-97

Control equipment(s) directly associated with this process

MRF Cyclone

MRF Building

# Emission Unit : TMP166499

Mar 17 2011, 12:38:12

## - Emission Unit Information

DAPC Emissions Unit ID: TMP166499

DAPC Description:

Company Equipment ID: Gasifier/Furnace/HRSG No. 1

Company Description: MSW Gasifier Line No. 1 - Processing line using Kinsei Sangyo technology that includes two batch gasifiers, a furnace, a HRSG and air pollution control equipment.

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Non-insignificant

Exemption Status: NA

Boiler/Turbine/Generator Design Boiler/Heater  
Capacity:

ORIS Boiler ID:

## - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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## - Processes

### - Emission Process Information

Process ID: Syngas Production 1

Company Process Description: Combustion of Syngas Produced from MSW

Source Classification Code (SCC): 1-02-007-99

Control equipment(s) directly associated with this process

BH No. 1

# Emission Unit : TMP166500

Mar 17 2011, 12:38:12

## - Emission Unit Information

DAPC Emissions Unit ID: TMP166500

DAPC Description:

Company Equipment ID: Gasifier/Furnace/HRSG No. 2

Company Description: MSW Gasifier Line No. 2 - Processing line using Kinsei Sangyo technology that includes two batch gasifiers, a furnace, a HRSG and air pollution control equipment.

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Non-insignificant

Exemption Status: NA

Boiler/Turbine/Generator Design Boiler/Heater  
Capacity:

ORIS Boiler ID:

## - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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## - Processes

### - Emission Process Information

Process ID: Syngas Combustion 2

Company Process Description: Combustion of Syngas Produced from MSW

Source Classification Code (SCC): 1-02-007-99

Control equipment(s) directly associated with this process

BH No. 2

# Emission Unit : TMP166501

Mar 17 2011, 12:38:12

## - Emission Unit Information

DAPC Emissions Unit ID: TMP166501

DAPC Description:

Company Equipment ID: Gasifier/Furnace/HRSG No. 3

Company Description: MSW Gasifier Line No. 3 - Processing line using Kinsei Sangyo technology that includes two batch gasifiers, a furnace, a HRSG and air pollution control equipment.

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Non-insignificant

Exemption Status: NA

Boiler/Turbine/Generator Design Boiler/Heater  
Capacity:

ORIS Boiler ID:

## - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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## - Processes

### - Emission Process Information

Process ID: Syngas Combustion 3

Company Process Description: Combustion of Syngas Produced from MSW

Source Classification Code (SCC): 1-02-007-99

Control equipment(s) directly associated with this process

BH No. 3



# Emission Unit : TMP166502

Mar 17 2011, 12:38:12

## - Emission Unit Information

DAPC Emissions Unit ID: TMP166502

DAPC Description:

Company Equipment ID: Gasifier/Furnace/HRSG No. 4

Company Description: MSW Gasifier Line No. 4 - Processing line using Kinsei Sangyo technology that includes two batch gasifiers, a furnace, a HRSG and air pollution control equipment.

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Non-insignificant

Exemption Status: NA

Boiler/Turbine/Generator Design Boiler/Heater  
Capacity:

ORIS Boiler ID:

## - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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## - Processes

### - Emission Process Information

Process ID: Syngas Combustion 4

Company Process Description: Combustion of Syngas Produced from MSW

Source Classification Code (SCC): 1-02-007-99

Control equipment(s) directly associated with this process

BH No. 4

## Emission Unit : TMP166503

Mar 17 2011, 12:38:12

### - Emission Unit Information

DAPC Emissions Unit ID: TMP166503

DAPC Description:

Company Equipment ID: Bottom Ash Storage Silo

Company Description: Storage Silo for ash removed from the gasifiers. Emissions will either be de minimis pursuant to OAC rule 3745-15-05 or storage will be exempt pursuant to OAC rule 3745-31-03(A)(1)(y) or (A)(1)(z).

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Insignificant

Exemption Status: Permit Exempt

Boiler/Turbine/Generator Design Not Applicable  
Capacity:

Design Capacity Units:

ORIS Boiler ID:

### - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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### - Processes

# Emission Unit : TMP166504

Mar 17 2011, 12:38:12

## - Emission Unit Information

DAPC Emissions Unit ID: TMP166504

DAPC Description:

Company Equipment ID: Baghouse Dust Storage Silo

Company Description: Storage Silo for flyash removed from the baghouses. Emissions will either be de minimis pursuant to OAC rule 3745-15-05 or storage will be exempt pursuant to OAC rule 3745-31-03(A)(1)(y) or (A)(1)(z).

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Insignificant

Exemption Status: Permit Exempt

Boiler/Turbine/Generator Design Not Applicable  
Capacity:

Design Capacity Units:

ORIS Boiler ID:

## - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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## - Processes

## Emission Unit : TMP166505

Mar 17 2011, 12:38:12

### - Emission Unit Information

DAPC Emissions Unit ID: TMP166505

DAPC Description:

Company Equipment ID: Urea Storage Silo

Company Description: Silo for the storage of urea used to make ammonia for the NOx emission control system. Emissions will either be de minimis pursuant to OAC rule 3745-15-05 or storage will be exempt pursuant to OAC rule 3745-31-03(A)(1)(y) or (A)(1)(z).

Operating Status: Not Installed

Completion of Initial Installation  
Date:

Begin Installation/Modification Date:

Commence Operation After  
Installation or Latest Modification  
Date:

Title V EU Classification: Insignificant

Exemption Status: Permit Exempt

Boiler/Turbine/Generator Design Not Applicable  
Capacity:

Design Capacity Units:

ORIS Boiler ID:

### - Allowable Emissions (EUlevel)

Pollutant	Pounds/Hour rate	Tons/Year rate	Comments
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### - Processes

## Control Equipment : BH No. 1

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Filter/Baghouse  
 DAPC Description:  
 Company ID: BH No. 1  
 Company Description: Baghouse for Gasifier Line No. 1  
 Operating Status: Not Operating Initial Installation Date:  
 Manufacturer: To be Determined Model: To Be Determined

**- Specific Equipment Type information**

Filter/Baghouse Type: Pulse Jet  
 Equipment Description: Baghouse No. 1  
 Pressure type: negative  
 Fabric Cleaning Mechanism: Pulse Jet  
 Operating Pressure Drop Range: 1.5 to 4.0  
 Lime Injection/fabric Coating Agent: Yes  
 Lime Injection/Fabric Coating Agent Type: lime as needed/activated carbon as needed  
 Lime Injection/Fabric Coating Feed Rate: lime as needed (est. 55 kg/hr) and/or activated carbon as needed (est. 10.1 kg/hr)  
 Bag Leak Detection System: Yes  
 Inlet Gas Flow Rate: 66000  
 Outlet Gas Flow Rate: 64600  
 Inlet Gas Temp: 480  
 Outlet Gas Temp: 445

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	99.9	99.9	100	99.9
PM10 (Filt) - Primary PM10, Filterable Portion Only	99.9	99.9	100	99.9
PM2.5 - Primary PM2.5 (Includes Filterables + Condensibles) (PM<2.5 Microns)	99.9	99.9	100	99.9

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

SCR No. 1

## Control Equipment : BH No. 2

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Filter/Baghouse  
 DAPC Description:  
 Company ID: BH No. 2  
 Company Description: Baghouse for Gasifier Line No. 2  
 Operating Status: Not Operating  
 Manufacturer: To be Determined  
 Initial Installation Date:  
 Model: To Be Determined

**- Specific Equipment Type information**

Filter/Baghouse Type: Pulse Jet  
 Equipment Description: Baghouse No. 2  
 Pressure type: negative  
 Fabric Cleaning Mechanism: Pulse Jet  
 Operating Pressure Drop Range: 1.5 to 4.0  
 Lime Injection/fabric Coating Agent: Yes  
 Lime Injection/Fabric Coating Agent Type: lime as needed/activated carbon as needed  
 Lime Injection/Fabric Coating Feed Rate: lime as needed (est. 55 kg/hr) and/or activated carbon as needed (est. 10.1 kg/hr)  
 Bag Leak Detection System: Yes  
 Inlet Gas Flow Rate: 66000  
 Outlet Gas Flow Rate: 64600  
 Inlet Gas Temp: 480  
 Outlet Gas Temp: 445

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	99.9	99.9	100	99.9
PM10 (Filt) - Primary PM10, Filterable Portion Only	99.9	99.9	100	99.9
PM2.5 - Primary PM2.5 (Includes Filterables + Condensibles) (PM<2.5 Microns)	99.9	99.9	100	99.9

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

SCR No. 2

## Control Equipment : BH No. 3

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Filter/Baghouse  
 DAPC Description:  
 Company ID: BH No. 3  
 Company Description: Baghouse for Gasifier Line No. 3  
 Operating Status: Not Operating  
 Manufacturer: To be Determined  
 Initial Installation Date:  
 Model: To Be Determined

**- Specific Equipment Type information**

Filter/Baghouse Type: Pulse Jet  
 Equipment Description: Baghouse No. 3  
 Pressure type: negative  
 Fabric Cleaning Mechanism: Pulse Jet  
 Operating Pressure Drop Range: 1.5 to 4.0  
 Lime Injection/fabric Coating Agent: Yes  
 Lime Injection/Fabric Coating Agent Type: lime as needed/activated carbon as needed  
 Lime Injection/Fabric Coating Feed Rate: lime as needed (est. 55 kg/hr) and/or activated carbon as needed (est. 10.1 kg/hr)  
 Bag Leak Detection System: Yes  
 Inlet Gas Flow Rate: 66000  
 Outlet Gas Flow Rate: 64600  
 Inlet Gas Temp: 480  
 Outlet Gas Temp: 445

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	99.9	99.9	100	99.9
PM10 (Filt) - Primary PM10, Filterable Portion Only	99.9	99.9	100	99.9
PM2.5 - Primary PM2.5 (Includes Filterables + Condensibles) (PM<2.5 Microns)	99.9	99.9	100	99.9

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

SCR No. 3

## Control Equipment : BH No. 4

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Filter/Baghouse  
 DAPC Description:  
 Company ID: BH No. 4  
 Company Description: Baghouse for Gasifier Line No. 4  
 Operating Status: Not Operating Initial Installation Date:  
 Manufacturer: To be Determined Model: To Be Determined

**- Specific Equipment Type information**

Filter/Baghouse Type: Pulse Jet  
 Equipment Description: Baghouse No. 4  
 Pressure type: negative  
 Fabric Cleaning Mechanism: Pulse Jet  
 Operating Pressure Drop Range: 1.5 to 4.0  
 Lime Injection/fabric Coating Agent: Yes  
 Lime Injection/Fabric Coating Agent Type: lime as needed/activated carbon as needed  
 Lime Injection/Fabric Coating Feed Rate: lime as needed (est. 55 kg/hr) and/or activated carbon as needed (est. 10.1 kg/hr)  
 Bag Leak Detection System: Yes  
 Inlet Gas Flow Rate: 66000  
 Outlet Gas Flow Rate: 64600  
 Inlet Gas Temp: 480  
 Outlet Gas Temp: 445

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	99.9	99.9	100	99.9
PM10 (Filt) - Primary PM10, Filterable Portion Only	99.9	99.9	100	99.9
PM2.5 - Primary PM2.5 (Includes Filterables + Condensibles) (PM<2.5 Microns)	99.9	99.9	100	99.9

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

SCR No. 4



# Control Equipment : FGD No. 1

Mar 17 2011, 12:38:12

## - Control Equipment Information

Equipment Type: Wet Scrubber  
DAPC Description:  
Company ID: FGD No. 1  
Company Description: Wet FGD No. 1  
Operating Status: Not Operating  
Manufacturer: To Be Determined  
Initial Installation Date:  
Model: To Be Determined

## - Specific Equipment Type information

Wet Scrubber Type: Packed Bed  
Equipment Description: Wet FGD No. 1  
Operating Pressure Drop Range: 1.5 to 4.0  
pH Range for Scrubbing Liquid: 7 to 8  
Scrubber Liquid Recirculated: Yes  
Scrubber Liquid Flow Rate: 1,365  
Scrubber Liquid Supply Pressure: 43  
Inlet Gas Flow Rate: 62050  
Outlet Gas Flow Rate: 46210  
Inlet Gas Temp: 410  
Outlet Gas Temp: 145

## - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
Hydrochloric Acid (Hydrogen Chloride)	98.0	98.0	100.0	98
Hydrogen Fluoride (Hydrofluoric Acid)	98.0	98.0	100.0	98
SO2 - Sulfur Dioxide	96.0	96.0	100.0	96

## - Associated Control Equipments And Egress Points

Egress points(s) directly associated with this control equipment

Flue No. 1

## Control Equipment : FGD No. 2

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Wet Scrubber  
 DAPC Description:  
     Company ID: FGD No. 2  
 Company Description: Wet FGD No. 2  
 Operating Status: Not Operating  
     Manufacturer: To Be Determined  
     Initial Installation Date:  
     Model: To Be Determined

**- Specific Equipment Type information**

Wet Scrubber Type: Packed Bed  
 Equipment Description: Wet FGD No. 2  
 Operating Pressure Drop Range: 1.5 to 4.0  
 pH Range for Scrubbing Liquid: 7 to 8  
 Scrubber Liquid Recirculated: Yes  
 Scrubber Liquid Flow Rate: 1,365  
 Scrubber Liquid Supply Pressure: 43  
 Inlet Gas Flow Rate: 62050  
 Outlet Gas Flow Rate: 46210  
 Inlet Gas Temp: 410  
 Outlet Gas Temp: 145

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
Hydrochloric Acid (Hydrogen Chloride)	98.0	98.0	100.0	98
Hydrogen Fluoride (Hydrofluoric Acid)	98.0	98.0	100.0	98
SO2 - Sulfur Dioxide	96.0	96.0	100.0	96

**- Associated Control Equipments And Egress Points**

Egress points(s) directly associated with this control equipment

Flue No. 2

## Control Equipment : FGD No. 3

Mar 17 2011, 12:38:12

### - Control Equipment Information

Equipment Type: Wet Scrubber  
DAPC Description:  
Company ID: FGD No. 3  
Company Description: Wet FGD No. 3  
Operating Status: Not Operating  
Manufacturer: To Be Determined  
Initial Installation Date:  
Model: To Be Determined

### - Specific Equipment Type information

Wet Scrubber Type: Packed Bed  
Equipment Description: Wet FGD No. 3  
Operating Pressure Drop Range: 1.5 to 4.0  
pH Range for Scrubbing Liquid: 7 to 8  
Scrubber Liquid Recirculated: Yes  
Scrubber Liquid Flow Rate: 1,365  
Scrubber Liquid Supply Pressure: 43  
Inlet Gas Flow Rate: 62050  
Outlet Gas Flow Rate: 46210  
Inlet Gas Temp: 410  
Outlet Gas Temp: 145

### - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
Hydrochloric Acid (Hydrogen Chloride)	98.0	98.0	100.0	98
Hydrogen Fluoride (Hydrofluoric Acid)	98.0	98.0	100.0	98
SO2 - Sulfur Dioxide	96.0	96.0	100.0	96

### - Associated Control Equipments And Egress Points

Egress points(s) directly associated with this control equipment

Flue No. 3

## Control Equipment : FGD No. 4

Mar 17 2011, 12:38:12

### - Control Equipment Information

Equipment Type: Wet Scrubber  
DAPC Description:  
Company ID: FGD No. 4  
Company Description: Wet FGD No. 4  
Operating Status: Not Operating  
Manufacturer: To Be Determined  
Initial Installation Date:  
Model: To Be Determined

### - Specific Equipment Type information

Wet Scrubber Type: Packed Bed  
Equipment Description: Wet FGD No. 4  
Operating Pressure Drop Range: 1.5 to 4.0  
pH Range for Scrubbing Liquid: 7 to 8  
Scrubber Liquid Recirculated: Yes  
Scrubber Liquid Flow Rate: 1,365  
Scrubber Liquid Supply Pressure: 43  
Inlet Gas Flow Rate: 62050  
Outlet Gas Flow Rate: 46210  
Inlet Gas Temp: 410  
Outlet Gas Temp: 145

### - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
Hydrochloric Acid (Hydrogen Chloride)	98.0	98.0	100.0	98
Hydrogen Fluoride (Hydrofluoric Acid)	98.0	98.0	100.0	98
SO2 - Sulfur Dioxide	96.0	96.0	100.0	96

### - Associated Control Equipments And Egress Points

Egress points(s) directly associated with this control equipment

Flue No. 4

## Control Equipment : MRF Baghouse

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Filter/Baghouse  
 DAPC Description:  
 Company ID: MRF Baghouse  
 Company Description: Baghouse for MRF Processing Equipment  
 Operating Status: Not Operating Initial Installation Date:  
 Manufacturer: To Be Determined Model: To Be Determined

**- Specific Equipment Type information**

Filter/Baghouse Type: Shaker  
 Equipment Description: Baghouse for MRF Processing Equipment  
 Pressure type: negative  
 Fabric Cleaning Mechanism: Shaker  
 Operating Pressure Drop Range: TBD  
 Lime Injection/fabric Coating Agent: No  
 Lime Injection/Fabric Coating Agent None  
 Type:  
 Lime Injection/Fabric Coating Feed NA  
 Rate:  
 Bag Leak Detection System: No  
 Inlet Gas Flow Rate: 4000  
 Outlet Gas Flow Rate: 4000  
 Inlet Gas Temp: 70  
 Outlet Gas Temp: 70

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	99.5	99.5	90	89.55
PM10 (Filt) - Primary PM10, Filterable Portion Only	99.5	99.5	95	94.525
PM2.5 (FILT) - Primary PM2.5, Filterable Portion Only	99.5	99.5	100	99.5

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

MRF Misting

## Control Equipment : MRF Building

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: Settling Chamber  
 DAPC Description:  
 Company ID: MRF Building  
 Company Description: MRF Building - Uncaptured dust settles within the building  
 Operating Status: Not Operating Initial Installation Date:  
 Manufacturer: Not Applicable Model: Not Applicable

**- Specific Equipment Type information**

Length x Width x Height - specify 367 ft x 245 ft x 36 ft units:

Equipment Description: MRF Building

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	90	90	100	90
PM10 (Filt) - Primary PM10, Filterable Portion Only	50	50	100	50
PM2.5 (FILT) - Primary PM2.5, Filterable Portion Only	5	5	100	5

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

MRF Misting

## Control Equipment : MRF Cyclone

Mar 17 2011, 12:38:12

### - Control Equipment Information

Equipment Type: Cyclone/Multiclone

DAPC Description:

Company ID: MRF Cyclone

Company Description: Cyclone dust collector prior to MRF Baghouse

Operating Status: Not Operating

Initial Installation Date:

Manufacturer: To Be Determined

Model: To Be Determined

### - Specific Equipment Type information

Cyclone Type: Simple

Equipment Description: Cyclone prior to MRF Baghouse

Operating Pressure Drop Range: To Be Determined

Inlet Gas Flow Rate: 4000

Outlet Gas Flow Rate: 4000

### - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	70	70	95	66.5
PM10 (Filt) - Primary PM10, Filterable Portion Only	50	50	95	47.5
PM2.5 (FILT) - Primary PM2.5, Filterable Portion Only	10	10	95	9.5

### - Associated Control Equipments And Egress Points

Control equipment(s) directly associated with this control equipment

MRF Baghouse

## Control Equipment : MRF Misting

Mar 17 2011, 12:38:12

### - Control Equipment Information

Equipment Type: Fugitive Dust Suppression

DAPC Description:

Company ID: MRF Misting

Company Description: Misting System to Minimize Fugitive Emissions from Doorways

Operating Status: Operating

Initial Installation Date:

Manufacturer: To Be Determined

Model: To Be Determined

### - Specific Equipment Type information

Suppressant Agent Type: Water

Equipment Description: Water Mist

Method of Application: Misting Nozzles

Application Rate - specify units: As Needed

Application Frequency: As Needed

### - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PE (Filt) - Primary PM, Filterable Portion Only	95	95	100	95
PM10 (Filt) - Primary PM10, Filterable Portion Only	95	95	100	95
PM2.5 (FILT) - Primary PM2.5, Filterable Portion Only	95	95	100	95

### - Associated Control Equipments And Egress Points

Egress points(s) directly associated with this control equipment

MRF Building



# Control Equipment : SCR No. 1

Mar 17 2011, 12:38:12

## - Control Equipment Information

Equipment Type: NOx Reduction Technology

DAPC Description:

Company ID: SCR No. 1

Company Description: Nox Control System No. 1

Operating Status: Not Operating

Initial Installation Date:

Manufacturer: To Be Determined

Model: To Be Determined

## - Specific Equipment Type information

Catalytic Reduction Type: Selective Catalytic

Reagent Type: Urea to Ammonia

Reagent Injection Rate - specify TBD (est. 10 kg/hr)  
units:

Reagent Slip Conc. - specify units: 1.3 lb/hr

Inlet Gas Flow Rate: 64600

Inlet Gas Temp: 445

Outlet Gas Temp: 410

## - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
NOx - Nitrogen Oxides	80	80	100	80

## - Associated Control Equipments And Egress Points

Control equipment(s) directly associated with this control equipment

FGD No. 1

## Control Equipment : SCR No. 2

Mar 17 2011, 12:38:12

### - Control Equipment Information

Equipment Type: NOx Reduction Technology

DAPC Description:

Company ID: SCR No. 2

Company Description: Nox Control System No. 2

Operating Status: Not Operating

Initial Installation Date:

Manufacturer: To Be Determined

Model: To Be Determined

### - Specific Equipment Type information

Catalytic Reduction Type: Selective Catalytic

Reagent Type: Urea to Ammonia

Reagent Injection Rate - specify TBD (est. 10 kg/hr)  
units:

Reagent Slip Conc. - specify units: 1.3 lb/hr

Inlet Gas Flow Rate: 64600

Inlet Gas Temp: 445

Outlet Gas Temp: 410

### - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
NOx - Nitrogen Oxides	80	80	100	80

### - Associated Control Equipments And Egress Points

Control equipment(s) directly associated with this control equipment

FGD No. 2

## Control Equipment : SCR No. 3

Mar 17 2011, 12:38:12

**- Control Equipment Information**

Equipment Type: NOx Reduction Technology  
 DAPC Description:  
 Company ID: SCR No. 3  
 Company Description: Nox Control System No. 3  
 Operating Status: Not Operating Initial Installation Date:  
 Manufacturer: To Be Determined Model: To Be Determined

**- Specific Equipment Type information**

Catalytic Reduction Type: Selective Catalytic  
 Reagent Type: Urea to Ammonia  
 Reagent Injection Rate - specify TBD (est. 10 kg/hr)  
 units:  
 Reagent Slip Conc. - specify units: 1.3 lb/hr  
 Inlet Gas Flow Rate: 64600  
 Inlet Gas Temp: 445  
 Outlet Gas Temp: 410

**- Pollutants Controlled**

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
NOx - Nitrogen Oxides	80	80	100	80

**- Associated Control Equipments And Egress Points**

Control equipment(s) directly associated with this control equipment

FGD No. 3

## Control Equipment : SCR No. 4

Mar 17 2011, 12:38:12

### - Control Equipment Information

Equipment Type: NOx Reduction Technology

DAPC Description:

Company ID: SCR No. 4

Company Description: Nox Control System No. 4

Operating Status: Not Operating

Initial Installation Date:

Manufacturer: To Be Determined

Model: To Be Determined

### - Specific Equipment Type information

Catalytic Reduction Type: Selective Catalytic

Reagent Type: Urea to Ammonia

Reagent Injection Rate - specify TBD (est. 10 kg/hr)  
units:

Reagent Slip Conc. - specify units: 1.3 lb/hr

Inlet Gas Flow Rate: 64600

Inlet Gas Temp: 445

Outlet Gas Temp: 410

### - Pollutants Controlled

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
NOx - Nitrogen Oxides	80	80	100	80

### - Associated Control Equipments And Egress Points

Control equipment(s) directly associated with this control equipment

FGD No. 4

## Egress Point : Flue No. 1

Mar 17 2011, 12:38:12

**- Egress Point Information**

Release Type: Stack-Vertical  
 DAPC Description:  
 Company ID: Flue No. 1  
 Company Description: Flue for Gassifier Line No. 1, venting from Stack No.1  
 Operating Status: Not Operating  
 Base Elevation (ft): 728.0 Fenceline Distance (ft): 60.0  
 Release Height (ft): 175.0

**- Building Dimension**

Length (ft) 525.0 Width (ft): 246.0  
 Height (ft): 75.5

**- Egress Latitude and Longitude**

Latitude (deg-min-sec): ( 41.0, 27.0, 25.2) Longitude (deg-min-sec): (-81.0, 43.0, 58.5)

**- Stack Details**

Shape: Round Cross Sectional Area (square ft): 110.5  
 Diameter (ft): 5.91  
 Temp At Max. Oper (F): 143.60001 Flow At Max. Oper (acfm): 46211.0  
 Temp At Avg. Oper (F): 143.60001 Flow At Avg. Oper (acfm): 46211.0

**- EIS Information**

Horizontal Collection Method: Global Positioning Method, with unspecified parameters  
 Horizontal Accuracy Measure: 100 Meter Accuracy  
 Reference Point: Point where a substance is released  
 Horizontal Reference Datum: World Geodetic System of 1984  
 Coordinate Data Source Code: An Organization or individual that contracts to perform work

**- CEM Data**

Description	H2S	SO2	NOX	CO	THC	HCL	HFL	O	TRS	CO2	FLOW	OPACITY	PM

## Egress Point : Flue No. 2

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### - Egress Point Information

Release Type: Stack-Vertical  
DAPC Description:  
Company ID: Flue No. 2  
Company Description: Flue for Gassifier Line No. 2, Venting from Stack No.1  
Operating Status: Not Operating  
Base Elevation (ft): 728.0 Fenceline Distance (ft): 60.0  
Release Height (ft): 175.0

### - Building Dimension

Length (ft) 525.0 Width (ft): 246.0  
Height (ft): 75.5

### - Egress Latitude and Longitude

Latitude (deg-min-sec): ( 41.0, 27.0, 19.65 ) Longitude (deg-min-sec): (-81.0, 43.0, 58.5 )

### - Stack Details

Shape: Round Cross Sectional Area (square ft): 110.5  
Diameter (ft): 5.91  
Temp At Max. Oper (F): 143.60001 Flow At Max. Oper (acfm): 46211.0  
Temp At Avg. Oper (F): 143.60001 Flow At Avg. Oper (acfm): 46211.0

### - EIS Information

Horizontal Collection Method: Global Positioning Method, with unspecified parameters  
Horizontal Accuracy Measure: 100 Meter Accuracy  
Reference Point: Point where a substance is released  
Horizontal Reference Datum: World Geodetic System of 1984  
Coordinate Data Source Code: An Organization or individual that contracts to perform work

### - CEM Data

Description	H2S	SO2	NOX	CO	THC	HCL	HFL	O	TRS	CO2	FLOW	OPACITY	PM
-------------	-----	-----	-----	----	-----	-----	-----	---	-----	-----	------	---------	----

# Egress Point : Flue No. 3

Mar 17 2011, 12:38:12

## - Egress Point Information

Release Type: Stack-Vertical

DAPC Description:

Company ID: Flue No. 3

Company Description: Flue for Gassifier Line No. 3, Venting from Stack No. 2

Operating Status: Not Operating

Base Elevation (ft): 728.0

Fenceline Distance (ft): 60.0

Release Height (ft): 175.0

## - Building Dimension

Length (ft) 525.0

Width (ft): 246.0

Height (ft): 75.5

## - Egress Latitude and Longitude

Latitude (deg-min-sec): ( 41.0, 27.0, 19.65)

Longitude (deg-min-sec): (-81.0, 43.0, 58.45)

## - Stack Details

Shape: Round

Cross Sectional Area (square ft): 110.5

Diameter (ft): 5.91

Temp At Max. Oper (F): 143.60001

Flow At Max. Oper (acfm): 46211.0

Temp At Avg. Oper (F): 143.60001

Flow At Avg. Oper (acfm): 46211.0

## - EIS Information

Horizontal Collection Method: Global Positioning Method, with unspecified parameters

Horizontal Accuracy Measure: 100 Meter Accuracy

Reference Point: Point where a substance is released

Horizontal Reference Datum: World Geodetic System of 1984

Coordinate Data Source Code: An Organization or individual that contracts to perform work

## - CEM Data

Description	H2S	SO2	NOX	CO	THC	HCL	HFL	O	TRS	CO2	FLOW	OPACITY	PM
-------------	-----	-----	-----	----	-----	-----	-----	---	-----	-----	------	---------	----

## Egress Point : Flue No. 4

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**- Egress Point Information**

Release Type: Stack-Vertical  
 DAPC Description:  
 Company ID: Flue No. 4  
 Company Description: Flue for Gassifier Line No. 4, Venting from Stack No. 2  
 Operating Status: Not Operating  
 Base Elevation (ft): 728.0 Fenceline Distance (ft): 60.0  
 Release Height (ft): 175.0

**- Building Dimension**

Length (ft) 525.0 Width (ft): 246.0  
 Height (ft): 75.5

**- Egress Latitude and Longitude**

Latitude (deg-min-sec): ( 41.0, 27.0, 25.2) Longitude (deg-min-sec): (-81.0, 43.0, 58.5)

**- Stack Details**

Shape: Round Cross Sectional Area (square ft): 110.5  
 Diameter (ft): 5.91  
 Temp At Max. Oper (F): 143.60001 Flow At Max. Oper (acfm): 46211.0  
 Temp At Avg. Oper (F): 143.60001 Flow At Avg. Oper (acfm): 46211.0

**- EIS Information**

Horizontal Collection Method: Global Positioning Method, with unspecified parameters  
 Horizontal Accuracy Measure: 100 Meter Accuracy  
 Reference Point: Point where a substance is released  
 Horizontal Reference Datum: World Geodetic System of 1984  
 Coordinate Data Source Code: An Organization or individual that contracts to perform work

**- CEM Data**

Description	H2S	SO2	NOX	CO	THC	HCL	HFL	O	TRS	CO2	FLOW	OPACITY	PM



## Egress Point : MRF Building

Mar 17 2011, 12:38:12

### - Egress Point Information

Release Type: Fugitive-Volume

DAPC Description:

Company ID: MRF Building

Company Description: MRF Building Doorways

Operating Status: Not Operating

Base Elevation (ft): 728.0

Fenceline Distance (ft): 60.0

### - Building Dimension

Length (ft) 365.0

Width (ft): 245.0

Height (ft): 36.0

### - Egress Latitude and Longitude

Latitude (deg-min-sec):

Longitude (deg-min-sec):

### - Volume Source Dimensions

Width (ft): 24.0

Height (ft): 24.0

Release Height (ft): 8.0

### - EIS Information

Horizontal Collection Method: Global Positioning Method, with unspecified parameters

Horizontal Accuracy Measure: 100 Meter Accuracy

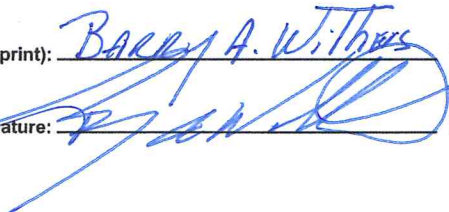
Reference Point: Point where a substance is released

Horizontal Reference Datum: World Geodetic System of 1984

Coordinate Data Source Code: An Organization or individual that contracts to perform work

Plume Temp (F): 60.0

PTI/PTIO Application A0041047  
Cleveland Public Power - Ridge Rd  
1318008750  
March 10, 2011

Responsible Official Name (please print): Barry A. Withers Title: DIRECTOR  
Responsible Official Signature:  Date: 3-10-11

**PTI/PTIO Application A0041047  
Cleveland Public Power - Ridge Rd  
1318008750  
March 11, 2011**

## Division of Air Pollution Control

Mar 17 2011, 12:38:12

### Application for Permit-to-Install or Permit-to-Install and Operate

*This section should be filled out for each permit to install (PTI) or Permit to Install and Operate (PTIO) application. A PTI is required for all air contaminant sources (emissions units) installed or modified after January 1, 1974 that are subject to OAC Chapter 3745-77. A PTIO is required for all air contaminant sources (emissions units) that are not subject to OAC Chapter 3745-77 (Title V). See the application instructions for additional information.*

For OEPA use only: <input checked="" type="checkbox"/> Installation <input checked="" type="checkbox"/> Request Federally enforceable restrictions
<input type="checkbox"/> Modification <input type="checkbox"/> General Permit
<input type="checkbox"/> Renewal <input type="checkbox"/> Other

1. Please summarize the reason for this permit application. This text will be in the public notice that will appear in the newspaper of the county where the facility is located.

This PTI application is for a Municipal Solid Waste (MSW) energy recovery facility. The facility will employ Kinsei Sangyo technology and utilize MSW as a feedstock to batch gasifiers to produce synthetic gas, combust the syngas and generate steam and electric power. The facility will include front-end Material Recovery Facility (MRF) equipment to prepare the MSW prior to use in the batch gasifiers. The facility is a minor source for new source review and will be subject to the Title V Operating Permit requirements.

The summary attachment to this application includes:

- (1) A description of the processes that will be installed;
- (2) A general Process Flow Diagram for the facility;
- (3) An analysis of the applicability of state and federal air pollution control rules;
- (4) A description of the Best Available Technology (BAT) that will be employed; and
- (5) A summary of the air quality modeling analyses that support approval of this application.

Is the purpose of this application to transition from OAC Chapter 3745-77 (Title V) to OAC Chapter 3745-31 (PTIO)?

No

2. **Establish PER Due Date** - Select an annual Permit Evaluation Report (PER) due date for this facility (does not apply to facilities subject to Title V, OAC Chapter 3745-77). If the PER has previously been established and a change is now desired, a PER Change Request form must be filed instead of selecting a date here.  
 PER not applicable (Title V) or due date already established

3. **Federal Rules Applicability**

**New Source Performance Standards (NSPS)**

*New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.*

Subject to subpart:

- AAAA - Small Muni. Waste Combustion Units After Aug. 30, 1999 or Modified After June 6, 2001

**National Emission Standards for Hazardous Air Pollutants (NESHAP)**

*National Emissions Standards for Hazardous Air Pollutants are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Not affected

**Maximum Achievable Control Technology (MACT)**

*The Maximum Achievable Control Technology standards are listed under 40 CFR 63 and OAC rule 3745-31-28.*

Not affected

**Prevention of Significant Deterioration (PSD)**

*These rules are found under OAC rule 3745-31-10 through OAC rule 3745-31-20.*

Not affected

**Greenhouse Gas Pollutant Prevention of Significant Deterioration (PSD)**

*These rules are listed under 40 CFR Parts 51, 52.*

Not affected

**Non-Attainment New Source Review**

*These rules are found under OAC rule 3745-31-21 through*

Not affected

**112 (r) - Risk Management Plan**  
 These rules are found under 40 CFR 68.

Not affected

**Title IV (Acid Rain Requirements)**  
 These rules are found under 40 CFR 72 and 40 CFR 73.

Not affected

**4. Express PTI/PTIO - Do you qualify for express PTI or PTIO processing?**

No

**5. Air Contaminant Sources in this Application - Identify the air contaminant source(s) for which you are applying below.**

Attach additional pages if necessary. Section II of this application and an EAC form should be completed for each air contaminant source.

Emissions Unit ID	Company Equipment ID (company's name for air contaminant source)	Equipment Description (List all equipment that are a part of this air contaminant source)
TMP166499	Gasifier/Furnace/HRSG No. 1	Baghouse for Gasifier Line No. 1
TMP166500	Gasifier/Furnace/HRSG No. 2	Baghouse for Gasifier Line No. 2
TMP166501	Gasifier/Furnace/HRSG No. 3	Baghouse for Gasifier Line No. 3
TMP166502	Gasifier/Furnace/HRSG No. 4	Baghouse for Gasifier Line No. 4

*The Emissions Unit ID would have been created when a previous air permit was issued. If no previous permits have been issued for this air contaminant source, leave this field blank. If this air contaminant source was previously identified in STARShip applications as a Z source (e.g., Z001), please provide that identification and a new ID will be assigned when the PTI/PTIO is issued.*

**6. Trade Secret Information - Is any information included in this application being claimed as a trade secret per Ohio Revised Code (ORC) 3704.08?**

Yes

**7. Permit Application Contact - Person to contact for questions about this application:**

Ivan Henderson	Cleveland Public Power
Name	Title
1300 Lakeside Avenue	Cleveland, OH 44114
Street Address	City/Township, State Zip Code
2166642708	ihenderson@cpp.org
Phone	Fax E-mail

**8. Application Attachments**

Description	Type	EAC Form Type	Public Document Id
Basis for Trade Secret Request	Trade Secrets not supported by Air Service		445447
Attestation Document	Other		454374
Emission Calculations and Synthetic Minor Demonstration	Calculations		445453
Summary of Application and Basis for Approval	Other		450466
Attestation Document	Other		454404

**Section II - Specific Air Contaminant Source Information**

**Facility ID:** 1318008750

**Emissions Unit ID:** TMP166499

**Company Equipment ID:** Gasifier/Furnace/H  
RSG No. 1

*One copy of this section should be filled out for each air contaminant source (emissions unit) covered by this PTI/PTIO application identified in Section I, Question 5. See the application instructions for additional information.*

1. **Air Contaminant Source Installation or Modification Schedule** Check all that apply (must be completed regardless of date of installation or modification):

New installation (for which construction has not yet begun, in accordance with OAC rule 3745-31-33). When will you begin to install the air contaminant source?  
after installation permit has been issued

2. **SCC Codes** - List all Source Classification Code(s) (SCC) that describe the process(es) performed by this air contaminant source (e.g., 1-02-002-04).

See Facility Profile

3. **Emissions Information** - The following table requests information needed to determine the applicable requirements and the compliance status of this air contaminant source with those requirements. Suggestions for how to estimate emissions may be found in the instructions to the Emissions Activity Category (EAC) forms required with this application. If you need further assistance, contact your District Office/Local Air Agency representative.

- If total potential emissions of HAPs or any Toxic Air Contaminant (as identified in OAC rule 3745-114-01) are greater than 1 ton/yr, fill in the table for that (those) pollutant(s). For all other pollutants, if Emissions before controls (max), lb/hr multiplied by 24 hours/day is greater than 10 lbs/day, fill in the table for that pollutant.
- Actual emissions are calculated including add-on control equipment. If you have no add-on control equipment, Emissions before controls will be the same as Actual emissions.
- Actual emissions and Requested Allowable should be based on operating 8760 hr/yr unless you are requesting federally enforceable operating restrictions to limit emissions. If so, calculate emissions based on requested operating restrictions and describe in your calculations.
- If you use units other than lbs/hr or ton/yr, specify the units used (e.g., gr/dscf, lb/ton charged, lb/MMBtu, tons/12-months).
- Requested Allowable (ton/yr) is often equivalent to Potential to Emit (PTE) as defined in OAC rule 3745-31-01 and OAC rule 3745-77-01.

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Particulate emissions (PE/PM) (formerly particulate matter, PM)	444	2.22	9.72	2.22	9.72
PM # 10 microns in diameter (PE/PM10)	444	2.22	9.72	2.22	9.72
PM # 2.5 microns in diameter (PE/PM2.5)	444	2.22	9.72	2.22	9.72
Sulfur dioxide (SO2)	154.79	6.19	27.12	6.19	27.12
Nitrogen oxides (NOx)	77.53	15.51	67.91	15.51	67.91
Carbon monoxide (CO)	6.94	6.94	30.40	6.94	30.40
Organic compounds (OC)	2.10	2.10	9.21	2.10	9.21
Volatile organic compounds (VOC)	2.10	2.10	9.21	2.10	9.21
Lead (Pb)	15.54	0.02	0.07	0.02	0.07
Total Hazardous Air Pollutants (HAPs)	45.37	1.18	5.17	1.18	5.17

Highest single HAP	26.21	0.52	2.30	0.52	2.30
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**Hazardous Air Pollutants (HAPs):**

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Cadmium	1.11	0.0011	0.005	0.0011	0.005
Hydrochloric Acid (Hydrogen Chloride)	26.21	0.52	2.30	0.52	2.30
Hydrogen Fluoride (Hydrofluoric Acid)	2.48	0.05	0.22	0.05	0.22
Sulfuric Acid	14.58	0.58	2.55	0.58	2.55
Ammonia	1.27	1.27	5.55	1.27	5.55

4. **Best Available Technology (BAT)** - For each pollutant for which the Requested Allowable in the above table exceeds 10 tons per year, BAT, as defined in OAC 3745-31-01, is required. Describe what has been selected as BAT and the basis for the selection:

BAT is the use of the Kinsei Sangyo design and performance specifications with the following proposed maximum emission rates:

PE/PM-10/PM-2.5 (filterable) - BAT is not required for filterable PE/PM-10/PM-2.5 (filterable) because the Baghouse and Wet FGD will limit emissions to less than 10 tons per year (TPY) (refer to the table above);

PE/PM-10/PM-2.5 (filterable + condensable) - BAT is a Baghouse and Wet FGD with an emission rate of no more than 27.23 TPY;

NOx - BAT is a NOx Control System (SCR) with an emission rate of no more than 67.91 TPY;

SO2 - BAT is a Wet-FGD with an emission rate of no more than 27.12 TPY; and

CO - BAT is good combustion practices with an emission rate of no more than 30.40 TPY.

5. **Control Equipment** - Does this air contaminant source employ emissions control equipment?

See Facility Profile

6. **Process Flow Diagram** - Attach a Process Flow Diagram to this application for this air contaminant source. See the application instructions for additional information.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
PFD for Line No. 1	Process flow diagram		445465

7. **Modeling information: (Note: items in bold in Tables 7-A and/or 7-B, as applicable, are required even if the tables do not otherwise need to be completed. If applicable, all information is required)** An air quality modeling analysis is required for PTIs and PTIOs for new installations or modifications, as defined in OAC rule 3745-31-01, where either the increase of toxic air contaminants from any air contaminant source or the increase of any other pollutant for all air contaminant sources combined exceed a threshold listed below. This analysis is to assure that the impact from the requested project will not exceed Ohio's Acceptable Incremental Impacts for criteria pollutants and/or Maximum Allowable Ground Level Concentrations (MAGLC) for toxic air contaminants. (See Ohio EPA, DAPCs Engineering Guide #69 for more information.) Permit requests that would have unacceptable impacts cannot be approved as proposed. See the line-by-line PTI/PTIO instructions for additional information.

See Facility Profile

8. **Request for Federally Enforceable Limits** - As part of this permit application, do you wish to propose voluntary restrictions to limit emissions in order to avoid specific requirements listed below, (i.e., are you requesting federally enforceable limits to obtain synthetic minor status)?

Yes

If yes, why are you requesting federally enforceable limits?

- Avoid being a major MACT source (see OAC rule 3745-31-01)
- Avoid being a major stationary source (see OAC rule 3745-31-01)

9. **Continuous Emissions Monitoring** Does this air contaminant source utilize any continuous emissions monitoring (CEM) equipment for indicating or demonstrating compliance? This does not include continuous parametric monitoring systems.  
*See Facility Profile*

10. **EAC Forms** The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each air contaminant source. At least one complete EAC form must be submitted for each air contaminant source for the application to be considered complete. Refer to the list attached to the application instructions. Please indicate which EAC form corresponds to this air contaminant source.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
General Process EAC	EAC	3100 Process operation (2003)	445493
Fuel Burning EAC	EAC	3101 Fuel burning operation (2003)	445527



**Section II - Specific Air Contaminant Source Information**

**Facility ID:** 1318008750

**Emissions Unit ID:** TMP166500

**Company Equipment ID:** Gasifier/Furnace/H  
RSG No. 2

*One copy of this section should be filled out for each air contaminant source (emissions unit) covered by this PTI/PTIO application identified in Section I, Question 5. See the application instructions for additional information.*

1. **Air Contaminant Source Installation or Modification Schedule** Check all that apply (must be completed regardless of date of installation or modification):

New installation (for which construction has not yet begun, in accordance with OAC rule 3745-31-33). When will you begin to install the air contaminant source?  
after installation permit has been issued

2. **SCC Codes** - List all Source Classification Code(s) (SCC) that describe the process(es) performed by this air contaminant source (e.g., 1-02-002-04).

See Facility Profile

3. **Emissions Information** - The following table requests information needed to determine the applicable requirements and the compliance status of this air contaminant source with those requirements. Suggestions for how to estimate emissions may be found in the instructions to the Emissions Activity Category (EAC) forms required with this application. If you need further assistance, contact your District Office/Local Air Agency representative.

- If total potential emissions of HAPs or any Toxic Air Contaminant (as identified in OAC rule 3745-114-01) are greater than 1 ton/yr, fill in the table for that (those) pollutant(s). For all other pollutants, if Emissions before controls (max), lb/hr multiplied by 24 hours/day is greater than 10 lbs/day, fill in the table for that pollutant.
- Actual emissions are calculated including add-on control equipment. If you have no add-on control equipment, Emissions before controls will be the same as Actual emissions.
- Actual emissions and Requested Allowable should be based on operating 8760 hr/yr unless you are requesting federally enforceable operating restrictions to limit emissions. If so, calculate emissions based on requested operating restrictions and describe in your calculations.
- If you use units other than lbs/hr or ton/yr, specify the units used (e.g., gr/dscf, lb/ton charged, lb/MMBtu, tons/12-months).
- Requested Allowable (ton/yr) is often equivalent to Potential to Emit (PTE) as defined in OAC rule 3745-31-01 and OAC rule 3745-77-01.

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Particulate emissions (PE/PM) (formerly particulate matter, PM)	444	2.22	9.72	2.22	9.72
PM # 10 microns in diameter (PE/PM10)	444	2.22	9.72	2.22	9.72
PM # 2.5 microns in diameter (PE/PM2.5)	444	2.22	9.72	2.22	9.72
Sulfur dioxide (SO2)	154.79	6.19	27.12	6.19	27.12
Nitrogen oxides (NOx)	77.53	15.51	67.91	15.51	67.91
Carbon monoxide (CO)	6.94	6.94	30.40	6.94	30.40
Organic compounds (OC)	2.10	2.10	9.21	2.10	9.21
Volatile organic compounds (VOC)	2.10	2.10	9.21	2.10	9.21
Lead (Pb)	15.54	0.02	0.07	0.02	0.07
Total Hazardous Air Pollutants (HAPs)	45.37	1.18	5.17	1.18	5.17

Highest single HAP	26.21	0.52	2.30	0.52	2.30
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**Hazardous Air Pollutants (HAPs):**

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Cadmium	1.11	0.0011	0.005	0.0011	0.005
Hydrochloric Acid (Hydrogen Chloride)	26.21	0.52	2.30	0.52	2.30
Hydrogen Fluoride (Hydrofluoric Acid)	2.48	0.05	0.22	0.05	0.22
Sulfuric Acid	14.58	0.58	2.55	0.58	2.55
Ammonia	1.27	1.27	5.55	1.27	5.55

4. **Best Available Technology (BAT)** - For each pollutant for which the Requested Allowable in the above table exceeds 10 tons per year, BAT, as defined in OAC 3745-31-01, is required. Describe what has been selected as BAT and the basis for the selection:

BAT is the use of the Kinsei Sangyo design and performance specifications with the following proposed maximum emission rates:

PE/PM-10/PM-2.5 (filterable) - BAT is not required for filterable PE/PM-10/PM-2.5 (filterable) because the Baghouse and Wet FGD will limit emissions to less than 10 tons per year (TPY) (refer to the table above);

PE/PM-10/PM-2.5 (filterable + condensable) - BAT is a Baghouse and Wet FGD with an emission rate of no more than 27.23 TPY;

NOx - BAT is a NOx Control System (SCR) with an emission rate of no more than 67.91 TPY;

SO2 - BAT is a Wet-FGD with an emission rate of no more than 27.12 TPY; and

CO - BAT is good combustion practices with an emission rate of no more than 30.40 TPY.

5. **Control Equipment** - Does this air contaminant source employ emissions control equipment?

See Facility Profile

6. **Process Flow Diagram** - Attach a Process Flow Diagram to this application for this air contaminant source. See the application instructions for additional information.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
PFD for Line No. 2	Process flow diagram		445483

7. **Modeling information: (Note: items in bold in Tables 7-A and/or 7-B, as applicable, are required even if the tables do not otherwise need to be completed. If applicable, all information is required)** An air quality modeling analysis is required for PTIs and PTIOs for new installations or modifications, as defined in OAC rule 3745-31-01, where either the increase of toxic air contaminants from any air contaminant source or the increase of any other pollutant for all air contaminant sources combined exceed a threshold listed below. This analysis is to assure that the impact from the requested project will not exceed Ohio's Acceptable Incremental Impacts for criteria pollutants and/or Maximum Allowable Ground Level Concentrations (MAGLC) for toxic air contaminants. (See Ohio EPA, DAPCs Engineering Guide #69 for more information.) Permit requests that would have unacceptable impacts cannot be approved as proposed. See the line-by-line PTI/PTIO instructions for additional information.

See Facility Profile

8. **Request for Federally Enforceable Limits** - As part of this permit application, do you wish to propose voluntary restrictions to limit emissions in order to avoid specific requirements listed below, (i.e., are you requesting federally enforceable limits to obtain synthetic minor status)?

Yes

If yes, why are you requesting federally enforceable limits?

- Avoid being a major MACT source (see OAC rule 3745-31-01)
- Avoid being a major stationary source (see OAC rule 3745-31-01)

9. **Continuous Emissions Monitoring** Does this air contaminant source utilize any continuous emissions monitoring (CEM) equipment for indicating or demonstrating compliance? This does not include continuous parametric monitoring systems.  
*See Facility Profile*

10. **EAC Forms** The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each air contaminant source. At least one complete EAC form must be submitted for each air contaminant source for the application to be considered complete. Refer to the list attached to the application instructions. Please indicate which EAC form corresponds to this air contaminant source.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
Fuel Burning EAC	EAC	3101 Fuel burning operation (2003)	445529
General Process EAC	EAC	3100 Process operation (2003)	445500

**Section II - Specific Air Contaminant Source Information**

Facility ID: 1318008750

Emissions Unit ID: TMP166501

Company Equipment ID: Gasifier/Furnace/H  
RSG No. 3

One copy of this section should be filled out for each air contaminant source (emissions unit) covered by this PTI/PTIO application identified in Section I, Question 5. See the application instructions for additional information.

1. **Air Contaminant Source Installation or Modification Schedule** Check all that apply (must be completed regardless of date of installation or modification):

New installation (for which construction has not yet begun, in accordance with OAC rule 3745-31-33). When will you begin to install the air contaminant source?  
after installation permit has been issued

2. **SCC Codes** - List all Source Classification Code(s) (SCC) that describe the process(es) performed by this air contaminant source (e.g., 1-02-002-04).

See Facility Profile

3. **Emissions Information** - The following table requests information needed to determine the applicable requirements and the compliance status of this air contaminant source with those requirements. Suggestions for how to estimate emissions may be found in the instructions to the Emissions Activity Category (EAC) forms required with this application. If you need further assistance, contact your District Office/Local Air Agency representative.

- If total potential emissions of HAPs or any Toxic Air Contaminant (as identified in OAC rule 3745-114-01) are greater than 1 ton/yr, fill in the table for that (those) pollutant(s). For all other pollutants, if Emissions before controls (max), lb/hr multiplied by 24 hours/day is greater than 10 lbs/day, fill in the table for that pollutant.
- Actual emissions are calculated including add-on control equipment. If you have no add-on control equipment, Emissions before controls will be the same as Actual emissions.
- Actual emissions and Requested Allowable should be based on operating 8760 hr/yr unless you are requesting federally enforceable operating restrictions to limit emissions. If so, calculate emissions based on requested operating restrictions and describe in your calculations.
- If you use units other than lbs/hr or ton/yr, specify the units used (e.g., gr/dscf, lb/ton charged, lb/MMBtu, tons/12-months).
- Requested Allowable (ton/yr) is often equivalent to Potential to Emit (PTE) as defined in OAC rule 3745-31-01 and OAC rule 3745-77-01.

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Particulate emissions (PE/PM) (formerly particulate matter, PM)	444	2.22	9.72	2.22	9.72
PM # 10 microns in diameter (PE/PM10)	444	2.22	9.72	2.22	9.72
PM # 2.5 microns in diameter (PE/PM2.5)	444	2.22	9.72	2.22	9.72
Sulfur dioxide (SO2)	154.79	6.19	27.12	6.19	27.12
Nitrogen oxides (NOx)	77.53	15.51	67.91	15.51	67.91
Carbon monoxide (CO)	6.94	6.94	30.40	6.94	30.40
Organic compounds (OC)	2.10	2.10	9.21	2.10	9.21
Volatile organic compounds (VOC)	2.10	2.10	9.21	2.10	9.21
Lead (Pb)	15.54	0.02	0.07	0.02	0.07
Total Hazardous Air Pollutants (HAPs)	45.37	1.18	5.17	1.18	5.17

Highest single HAP	26.21	0.52	2.30	0.52	2.30
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**Hazardous Air Pollutants (HAPs):**

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Cadmium	1.11	0.0011	0.005	0.0011	0.005
Hydrochloric Acid (Hydrogen Chloride)	26.21	0.52	2.30	0.52	2.30
Hydrogen Fluoride (Hydrofluoric Acid)	2.48	0.05	0.22	0.05	0.22
Sulfuric Acid	14.58	0.58	2.55	0.58	2.55
Ammonia	1.27	1.27	5.55	1.27	5.55

4. **Best Available Technology (BAT)** - For each pollutant for which the Requested Allowable in the above table exceeds 10 tons per year, BAT, as defined in OAC 3745-31-01, is required. Describe what has been selected as BAT and the basis for the selection:

BAT is the use of the Kinsei Sangyo design and performance specifications with the following proposed maximum emission rates:

PE/PM-10/PM-2.5 (filterable) - BAT is not required for filterable PE/PM-10/PM-2.5 (filterable) because the Baghouse and Wet FGD will limit emissions to less than 10 tons per year (TPY) (refer to the table above);

PE/PM-10/PM-2.5 (filterable + condensable) - BAT is a Baghouse and Wet FGD with an emission rate of no more than 27.23 TPY;

NOx - BAT is a NOx Control System (SCR) with an emission rate of no more than 67.91 TPY;

SO2 - BAT is a Wet-FGD with an emission rate of no more than 27.12 TPY; and

CO - BAT is good combustion practices with an emission rate of no more than 30.40 TPY.

5. **Control Equipment** - Does this air contaminant source employ emissions control equipment?

See Facility Profile

6. **Process Flow Diagram** - Attach a Process Flow Diagram to this application for this air contaminant source. See the application instructions for additional information.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
PFD for Line No. 3	Process flow diagram		445487

7. **Modeling information:** (Note: items in bold in Tables 7-A and/or 7-B, as applicable, are required even if the tables do not otherwise need to be completed. If applicable, all information is required) An air quality modeling analysis is required for PTIs and PTIOs for new installations or modifications, as defined in OAC rule 3745-31-01, where either the increase of toxic air contaminants from any air contaminant source or the increase of any other pollutant for all air contaminant sources combined exceed a threshold listed below. This analysis is to assure that the impact from the requested project will not exceed Ohio's Acceptable Incremental Impacts for criteria pollutants and/or Maximum Allowable Ground Level Concentrations (MAGLC) for toxic air contaminants. (See Ohio EPA, DAPCs Engineering Guide #69 for more information.) Permit requests that would have unacceptable impacts cannot be approved as proposed. See the line-by-line PTI/PTIO instructions for additional information.

See Facility Profile

8. **Request for Federally Enforceable Limits** - As part of this permit application, do you wish to propose voluntary restrictions to limit emissions in order to avoid specific requirements listed below, (i.e., are you requesting federally enforceable limits to obtain synthetic minor status)?

Yes

If yes, why are you requesting federally enforceable limits?

- Avoid being a major MACT source (see OAC rule 3745-31-01)
- Avoid being a major stationary source (see OAC rule 3745-31-01)

9. **Continuous Emissions Monitoring** Does this air contaminant source utilize any continuous emissions monitoring (CEM) equipment for indicating or demonstrating compliance? This does not include continuous parametric monitoring systems.  
*See Facility Profile*

10. **EAC Forms** The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each air contaminant source. At least one complete EAC form must be submitted for each air contaminant source for the application to be considered complete. Refer to the list attached to the application instructions. Please indicate which EAC form corresponds to this air contaminant source.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
Fuel Burning EAC	EAC	3101 Fuel burning operation (2003)	445531
General Process EAC	EAC	3100 Process operation (2003)	445504

**Section II - Specific Air Contaminant Source Information**

**Facility ID:** 1318008750

**Emissions Unit ID:** TMP166502

**Company Equipment ID:** Gasifier/Furnace/H  
RSG No. 4

*One copy of this section should be filled out for each air contaminant source (emissions unit) covered by this PTI/PTIO application identified in Section I, Question 5. See the application instructions for additional information.*

1. **Air Contaminant Source Installation or Modification Schedule** Check all that apply (must be completed regardless of date of installation or modification):

New installation (for which construction has not yet begun, in accordance with OAC rule 3745-31-33). When will you begin to install the air contaminant source?  
after installation permit has been issued

2. **SCC Codes** - List all Source Classification Code(s) (SCC) that describe the process(es) performed by this air contaminant source (e.g., 1-02-002-04).

See Facility Profile

3. **Emissions Information** - The following table requests information needed to determine the applicable requirements and the compliance status of this air contaminant source with those requirements. Suggestions for how to estimate emissions may be found in the instructions to the Emissions Activity Category (EAC) forms required with this application. If you need further assistance, contact your District Office/Local Air Agency representative.

- If total potential emissions of HAPs or any Toxic Air Contaminant (as identified in OAC rule 3745-114-01) are greater than 1 ton/yr, fill in the table for that (those) pollutant(s). For all other pollutants, if Emissions before controls (max), lb/hr multiplied by 24 hours/day is greater than 10 lbs/day, fill in the table for that pollutant.
- Actual emissions are calculated including add-on control equipment. If you have no add-on control equipment, Emissions before controls will be the same as Actual emissions.
- Actual emissions and Requested Allowable should be based on operating 8760 hr/yr unless you are requesting federally enforceable operating restrictions to limit emissions. If so, calculate emissions based on requested operating restrictions and describe in your calculations.
- If you use units other than lbs/hr or ton/yr, specify the units used (e.g., gr/dscf, lb/ton charged, lb/MMBtu, tons/12-months).
- Requested Allowable (ton/yr) is often equivalent to Potential to Emit (PTE) as defined in OAC rule 3745-31-01 and OAC rule 3745-77-01.

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Particulate emissions (PE/PM) (formerly particulate matter, PM)	444	2.22	9.72	2.22	9.72
PM # 10 microns in diameter (PE/PM10)	444	2.22	9.72	2.22	9.72
PM # 2.5 microns in diameter (PE/PM2.5)	444	2.22	9.72	2.22	9.72
Sulfur dioxide (SO2)	154.79	6.19	27.12	6.19	27.12
Nitrogen oxides (NOx)	77.53	15.51	67.91	15.51	67.91
Carbon monoxide (CO)	6.94	6.94	30.40	6.94	30.40
Organic compounds (OC)	2.10	2.10	9.21	2.10	9.21
Volatile organic compounds (VOC)	2.10	2.10	9.21	2.10	9.21
Lead (Pb)	15.54	0.02	0.07	0.02	0.07
Total Hazardous Air Pollutants (HAPs)	45.37	1.18	5.17	1.18	5.17

Highest single HAP	26.21	0.52	2.30	0.52	2.30
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**Hazardous Air Pollutants (HAPs):**

Pollutant	Emissions before controls (max)* (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Cadmium	1.11	0.0011	0.005	0.0011	0.005
Hydrochloric Acid (Hydrogen Chloride)	26.21	0.52	2.30	0.52	2.30
Hydrogen Fluoride (Hydrofluoric Acid)	2.48	0.05	0.22	0.05	0.22
Sulfuric Acid	14.58	0.58	2.55	0.58	2.55
Ammonia	1.27	1.27	5.55	1.27	5.55

4. **Best Available Technology (BAT)** - For each pollutant for which the Requested Allowable in the above table exceeds 10 tons per year, BAT, as defined in OAC 3745-31-01, is required. Describe what has been selected as BAT and the basis for the selection:

BAT is the use of the Kinsei Sangyo design and performance specifications with the following proposed maximum emission rates:

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PE/PM-10/PM-2.5 (filterable + condensable) - BAT is a Baghouse and Wet FGD with an emission rate of no more than 27.23 TPY;

NOx - BAT is a NOx Control System (SCR) with an emission rate of no more than 67.91 TPY;

SO2 - BAT is a Wet-FGD with an emission rate of no more than 27.12 TPY; and

CO - BAT is good combustion practices with an emission rate of no more than 30.40 TPY.

5. **Control Equipment** - Does this air contaminant source employ emissions control equipment?

See Facility Profile

6. **Process Flow Diagram** - Attach a Process Flow Diagram to this application for this air contaminant source. See the application instructions for additional information.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
PFD for Line No. 4	Process flow diagram		445489

7. **Modeling information:** (Note: items in bold in Tables 7-A and/or 7-B, as applicable, are required even if the tables do not otherwise need to be completed. If applicable, all information is required) An air quality modeling analysis is required for PTIs and PTIOs for new installations or modifications, as defined in OAC rule 3745-31-01, where either the increase of toxic air contaminants from any air contaminant source or the increase of any other pollutant for all air contaminant sources combined exceed a threshold listed below. This analysis is to assure that the impact from the requested project will not exceed Ohio's Acceptable Incremental Impacts for criteria pollutants and/or Maximum Allowable Ground Level Concentrations (MAGLC) for toxic air contaminants. (See Ohio EPA, DAPCs Engineering Guide #69 for more information.) Permit requests that would have unacceptable impacts cannot be approved as proposed. See the line-by-line PTI/PTIO instructions for additional information.

See Facility Profile

8. **Request for Federally Enforceable Limits** - As part of this permit application, do you wish to propose voluntary restrictions to limit emissions in order to avoid specific requirements listed below, (i.e., are you requesting federally enforceable limits to obtain synthetic minor status)?

Yes

If yes, why are you requesting federally enforceable limits?



- Avoid being a major MACT source (see OAC rule 3745-31-01)
- Avoid being a major stationary source (see OAC rule 3745-31-01)

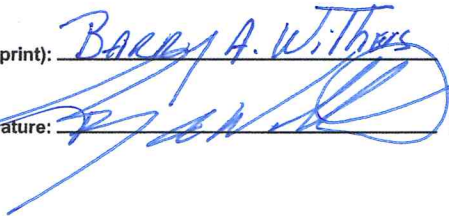
9. **Continuous Emissions Monitoring** Does this air contaminant source utilize any continuous emissions monitoring (CEM) equipment for indicating or demonstrating compliance? This does not include continuous parametric monitoring systems.  
*See Facility Profile*

10. **EAC Forms** The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each air contaminant source. At least one complete EAC form must be submitted for each air contaminant source for the application to be considered complete. Refer to the list attached to the application instructions. Please indicate which EAC form corresponds to this air contaminant source.

Process Flow Diagrams:

Description	Type	EAC Form Type	Public Document Id
Fuel Burning EAC	EAC	3101 Fuel burning operation (2003)	445533
General Process EAC	EAC	3100 Process operation (2003)	445507

PTI/PTIO Application A0041047  
Cleveland Public Power - Ridge Rd  
1318008750  
March 10, 2011

Responsible Official Name (please print): Barry A. Withers Title: DIRECTOR  
Responsible Official Signature:  Date: 3-10-11

**Cleveland Public Power - Ridge Road  
MSW Gasification HRSG Project  
Emissions from Kinsei Sangyo Gasifier Lines 1 - 4\***

Pollutant	Emissions for Each Gasifier Line				Total TPY Emissions 4 Gasifier/Furnace/HRSG Lines		NSR Threshold	112(g) Threshold
	lb/hr	kg/day	lb/day	TPY	8,760 hours 100%	92% Use Factor	TPY	TPY
PM	2.22	24.17	53.29	9.72	38.90	35.7	<100	
PM(F+C)	6.22	67.67	149.20	27.23	108.92	99.8	<100	
SO <sub>2</sub>	6.19	67.39	148.60	27.12	108.48	99.4	<100	
NO <sub>2</sub>	11.63	126.58	279.10	50.94	203.74	186.8	<250	
NO <sub>x</sub>	15.51	168.77	372.13	67.91	271.66	249.0	<250	
CO	6.94	75.55	166.58	30.40	121.60	111.5	<250	
VOC	2.10		50.44	9.21	36.82	33.75	<250	
H <sub>2</sub> SO <sub>4</sub>	0.58	6.35	14.00	2.55	10.22	9.37	<250	
Lead (Pb)	0.02	0.17	0.37	0.07	0.27	0.25	<250	
Ammonia	1.27	13.78	30.38	5.55	22.18	20.33		
<b>HAPs:</b>								
HCl	0.52	5.71	12.58	2.30	9.18	8.42		<10
Dioxin	0.000001	0.00002	0.00003	0.00001	0.000025	0.000023		<10
Cadmium (Cd)	0.001	0.01	0.027	0.005	0.02	0.02		<10
Mercury (Hg)	0.01	0.06	0.13	0.02	0.10	0.09		<10
HF	0.05	0.54	1.19	0.22	0.87	0.80		<10
<b>Total HAPs</b>	0.58		13.93	2.54	10.17	9.32		<25

*\*Based on Kinsei Sangyo Japan proprietary design and performance specifications.*

### Explanation for Request for Trade Secret/Confidential Business Information Determination

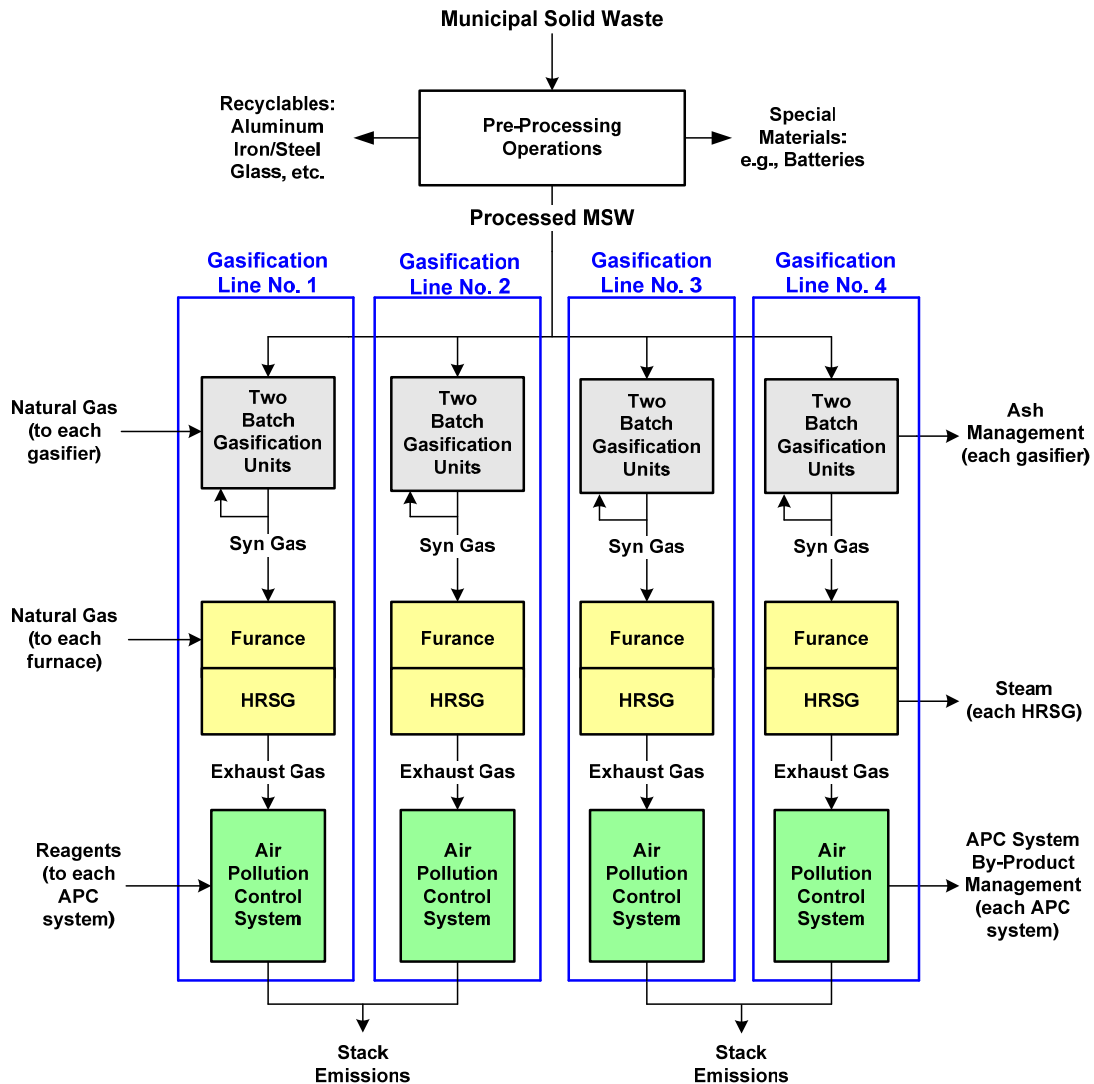
Emissions Unit	Type of Information	Location in PTIO Application	Explanation for Trade Secret Determination	Security Measures		
Gasifier/Furnace/ HRSG #1	Production Rate.	Emission Activity Category (EAC) Form General Process (page 1)	Economic value would be obtained from the disclosure of this information.	Employees, contractors and consultants are provided this information/data on a need to know basis and are bound by confidentiality agreements.		
	Heat Input and Steam Output Capacities	Emission Activity Category (EAC) Form Fuel Burning Operation (page 1)				
	Heat Content of Syngas and Maximum Fuel Usage	Emission Activity Category (EAC) Form Fuel Burning Operation (page 2)				
Gasifier/Furnace/ HRSG #2	Production Rate.	Emission Activity Category (EAC) Form General Process (page 1)				
	Heat Input and Steam Output Capacities	Emission Activity Category (EAC) Form Fuel Burning Operation (page 1)				
	Heat Content of Syngas and Maximum Fuel Usage	Emission Activity Category (EAC) Form Fuel Burning Operation (page 2)				
Gasifier/Furnace/ HRSG #3	Production Rate.	Emission Activity Category (EAC) Form General Process (page 1)				
	Heat Input and Steam Output Capacities	Emission Activity Category (EAC) Form Fuel Burning Operation (page 1)				
	Heat Content of Syngas and Maximum Fuel Usage	Emission Activity Category (EAC) Form Fuel Burning Operation (page 2)				
Gasifier/Furnace/ HRSG #4	Production Rate.	Emission Activity Category (EAC) Form General Process (page 1)				
	Heat Input and Steam Output Capacities	Emission Activity Category (EAC) Form Fuel Burning Operation (page 1)				
	Heat Content of Syngas and Maximum Fuel Usage	Emission Activity Category (EAC) Form Fuel Burning Operation (page 2)				

**Cleveland Public Power (CPP)**  
**Proposed Ridge Road MSW Processing and Energy Recovery Facility**  
**Summary of Air Permit Application and Basis for Approval**

**Description of the Proposed Facility**

Cleveland Public Power (CPP) proposes to install and operate new air contaminant emissions units at 3727 Ridge Road in Cleveland. Figure 1 is a general process diagram that shows the components of the Kinsei Sangyo technology.

**Figure 1**  
**Cleveland Public Power - Ridge Road**  
**MSW Gasification HRSG Project**  
**General Process Flow Diagram**



The proposed CPP facility will include emissions units associated with: (1) processing municipal solid waste (MSW) to extract recyclable materials and prepare the MSW for gasification; (2) producing syngas from the processed MSW; (3) combusting the syngas to produce steam for plant operations and electric power generation (less than 25

megawatts and, therefore, not an “electric utility unit”); (4) storing reagents prior to use in the emission control systems; and (5) storing residual materials accumulated from the operation of the Kinsei Sangyo gasifiers and the facility’s air pollution control systems and loading the materials for shipment to off-site disposal facilities.

### Identification of Emissions Units and Preparation of the Air Permit Application in e-Business/Air Services

The air permit application submitted by CPP includes the eight separate emissions units identified in Table 1. The primary non-exempt significant emissions units are the four identical Gasifier Lines. There are also four exempt insignificant emissions units, including the MSW pre-processing operations, storage of urea used to make ammonia for the nitrogen oxides (NO<sub>x</sub>) emission control system and storage and loading of residual by-products that are accumulated from the operations of the air pollution control systems.

<b>Table 1 Proposed New Emissions Units</b>			
<b>Emissions Unit ID</b>	<b>Description</b>	<b>Emissions Unit Classification</b>	
		<b>PTI</b>	<b>Title V</b>
TMP166367	MSW Pre-Processing Processing MSW to extract recyclable materials and prepare the MSW feedstock for the gasifiers.	Exempt	Insignificant
TMP166368	Gasifier Line No. 1 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment. <sup>(1)</sup>	Non-Exempt	Significant
TMP166369	Gasifier Line No. 2 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment. <sup>(1)</sup>	Non-Exempt	Significant
TMP166370	Gasifier Line No. 3 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment. <sup>(1)</sup>	Non-Exempt	Significant
TMP166371	Gasifier Line No. 4 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment. <sup>(1)</sup>	Non-Exempt	Significant
TMP166376	Bottom Ash Storage Silo Storage silo for ash removed from the gasifiers.	Exempt	Insignificant
TMP166377	Baghouse Dust (Flyash) Storage Silo Storage silo for flyash removed from the baghouses.	Exempt	Insignificant
TMP166378	Urea Storage Silo Silo for the storage of urea used to make ammonia for the NO <sub>x</sub> emission control system.	Exempt	Insignificant
<sup>(1)</sup> This permit application is based on the Kinsei Sangyo Japan proprietary design and performance specifications.			

## Minor Stationary Source Determination for New Source Review

The proposed CPP facility is classified as a synthetic minor stationary source pursuant to the Ohio EPA and US EPA New Source Review (NSR) rules and the current air quality attainment/non-attainment designations for Cuyahoga County. The operational restriction associated with the synthetic minor is an annual capacity factor for the operation of the four gasifier lines of no more than 92%.

The Prevention of Significant Deterioration (PSD) provisions of NSR are applicable to proposed new projects located in air quality attainment areas if the proposed annual emissions of the attainment air pollutants are 250 tons per year (TPY) or more and the proposed project is not classified in one of 28 listed source categories. The non-attainment provisions of NSR are applicable to proposed new projects in air quality non-attainment areas if the proposed annual emissions of the non-attainment air pollutants are 100 TPY or more. Fugitive (non-stack) emissions do not count towards the major stationary source thresholds if the proposed new project is not classified in one of 28 listed source categories. The proposed CPP project does not fall into any of the 28 listed source categories. As a result, the PSD applicability threshold for the proposed CPP project is 250 TPY and the non-attainment new source review (NNSR) threshold is 100 TPY.

Table 2 presents the current National Ambient Air Quality Standards (NAAQS) air quality status classifications for Cuyahoga County. All of Cuyahoga County is currently designated non-attainment for the annual average and 24-hour average National Ambient Air Quality Standards (NAAQS) for PM<sub>2.5</sub> (*i.e.*, particulate matter less than or equal to 2.5 microns in diameter). Therefore, the proposed CPP project is classified as a minor stationary source for non-attainment NSR (NNSR) if the annual emissions of PM<sub>2.5</sub> or sulfur dioxide (SO<sub>2</sub>) (a precursor to PM<sub>2.5</sub>) are less than 100 TPY. The area of Cuyahoga County where the proposed CPP facility will be located is currently designated attainment for all of the other NAAQS pollutants. Therefore, the proposed CPP project is classified as a minor stationary source for PSD if the annual emissions of the other NAAQS attainment pollutants (or precursors) are less than 250 TPY.

<b>NAAQS Air Pollutant</b>	<b>Concentration</b>	<b>Averaging Time</b>	<b>Attainment</b>	<b>Non-Attainment</b>	<b>Not Yet Designated</b>
PM <sub>2.5</sub> (Particulate Matter less than or equal to 2.5 microns in diameter)	15.0 µg/m <sup>3</sup>	Annual		√	
	35.0 µg/m <sup>3</sup>	24-hr		√	
PM <sub>10</sub> (Particulate Matter less than or equal to 10 microns in diameter)	150.0 µg/m <sup>3</sup>	24-hr	√		
Sulfur Dioxide (SO <sub>2</sub> )	80 µg/m <sup>3</sup>	Annual	√		
	365 µg/m <sup>3</sup>	24-hr	√		
	75 ppb	1-hr			√
Nitrogen Dioxide (NO <sub>2</sub> )	100 µg/m <sup>3</sup>	Annual	√		
	100 ppb	1-hr			√
Carbon Monoxide (CO)	10,000 µg/m <sup>3</sup>	8-hr	√		
	40,000 µg/m <sup>3</sup>	1-hr	√		

NAAQS Air Pollutant	Concentration	Averaging Time	Attainment	Non-Attainment	Not Yet Designated
Ozone	0.08 ppm	8-hr	√		
Lead (Pb)	1.5 µg/m <sup>3</sup>	Quarterly	√		
	0.15 µg/m <sup>3</sup>	3-month rolling	√ <sup>(1)</sup>		
<sup>(1)</sup> A small isolated area south of the City of Cleveland is designated non-attainment.					

The total maximum annual emissions of each air pollutant emitted by the proposed CPP project are less than the applicable major stationary source thresholds as presented in Table 3.

Air Pollutant	Annual Emissions from CPP Facility (TPY) <sup>(1)</sup>	Cuyahoga County NSR Major Source Threshold (TPY)	
		Attainment PSD	Non-Attainment NNSR
PM <sub>2.5</sub> (Particulate Matter less than or equal to 2.5 microns in diameter)	99.8		<100
Sulfur Dioxide (SO <sub>2</sub> ) (Precursor to PM <sub>2.5</sub> )	99.4		<100
PM <sub>10</sub> (Particulate Matter less than or equal to 10 microns in diameter)	99.8	<250	
Sulfur Dioxide (SO <sub>2</sub> )	99.4	<250	
Nitrogen Dioxide (NO <sub>2</sub> )	186.8	<250	
Nitrogen Oxides (NO <sub>x</sub> ) (Precursor to Ozone)	249.0	<250	
Volatile Organic Compounds (VOC) (Precursor to Ozone)	33.75	<250	
Carbon Monoxide (CO)	111.5	<250	
Lead (Pb)	0.25	<250	
<sup>(1)</sup> Based on an annual capacity factor for the operation of the four gasifier lines of no more than 92%.			

**Applicability of 250 TPY Prevention of Significant Deterioration Threshold.** The PSD major stationary source threshold for the proposed CPP project is 100 TPY if the project falls into one of the 28 listed source categories. It is obvious that the proposed CPP project does not fall into 24 of the listed source categories. Four categories require further examination:

- (1) Fossil fuel-fired steam electric plants of more than two hundred fifty million British thermal units per hour heat input. The proposed CPP facility will burn a syngas fuel produced from the gasification of MSW. Therefore, the proposed CPP project is not a fossil-fired steam plant.



- (2) Municipal incinerators capable of charging more than two hundred fifty tons of refuse per day. The gasifiers for the CPP project do not fall within the category of “municipal incinerators capable of charging more than 250 tons of refuse per day” because the gasifiers do not “burn solid waste for the purpose of reducing the volume of waste by removing combustible matter” and each gasifier will have a maximum daily processing capacity of less than 250 tons of MSW.
- (3) Fuel conversion plants. US EPA guidance states that fuel conversion plants process fossil fuels (e.g., converting coal to gas). The gasifiers for the CPP project are not fuel conversion plants because the MSW charged does not involve the conversion of a “fossil fuel”.
- (4) Fossil fuel boilers (or combinations thereof) totaling more than two hundred fifty million British thermal units per hour heat input. The proposed CPP facility will burn a syngas fuel produced from the gasification of MSW. Therefore, the proposed CPP project does not include fossil fuel boilers and does not fall into this source category.

### **Review of the Criteria for Approval of the Air Permit-to-Install**

The criteria for approval of an air Permit-to-Install application are enumerated in OAC rule 3745-31-05 - Criteria for Decision by the Director. Table 4 summarizes the basis for approving the application submitted by CPP for the proposed Ridge Road facility. An additional explanation for each of the key criterion is provided in this overview of the CPP application.

<b>Table 4 Basis for Approval of the CPP Application</b>		
<b>Citation in OAC Rule 3745-31-05</b>	<b>Description of Requirement</b>	<b>CPP Application</b>
(A)(1)	Not prevent or interfere with the attainment or maintenance of applicable ambient air quality standards	The predicted air quality impact from the operation of the proposed CPP facility conforms to Ohio EPA DAPC Engineering Guide #69 and all applicable rules and guidelines.
(A)(2)(a)	Not violate applicable emission standards adopted by the Ohio EPA	The proposed air pollution control systems ensure that the maximum emission rates conform to the applicable Ohio EPA rules.
(A)(2)(b)	Not violate applicable federal NSPS	The proposed CPP facility will meet the requirements in 40 CFR Part 60 Subpart AAAA (applicable to units that combust 35 – 250 tons per day of MSW or refuse-derived fuel).
(A)(2)(c)	Not violate requirements for major new sources or major modifications	The CPP application requests federally enforceable limitations on potential to emit to cap annual emissions to less than the NSR applicability thresholds.

**Table 4  
Basis for Approval of the CPP Application**

<b>Citation in OAC Rule 3745-31-05</b>	<b>Description of Requirement</b>	<b>CPP Application</b>
(A)(2)(d)	Not violate applicable NESHAPS or MACT standards	There are no NESHAP or MACT standards that are applicable to the proposed CPP facility.
(A)(3)	Employ BAT when applicable	The proposed air pollution control systems ensure that the maximum emission rates conform to BAT requirements.
(B)	Comply with applicable rules and laws during operation	The proposed air pollution control systems ensure compliance during the operation of the proposed CPP facility.
(C)	Conditional PTIO	CPP does not anticipate the need for a conditional PTO.
(D)	Federally enforceable limitations on potential to emit	The CPP application requests rolling 12-month limitations and proposes adequate and enforceable methods for establishing compliance.
(E)	Ensure compliance with any provisions of the statutes or regulations of the state of Ohio that are not mandated by the Clean Air Act or regulations adopted by the US EPA	The predicted air quality impact from the CPP facility conforms to the following Ohio EPA requirements that are not mandated by the federal CAA: - OAC rule 3745-114-01; - Ohio EPA DAPC Engineering Guide #69, and - Ohio EPA's Air Toxic Policy.
(G)	Provisions for issuance of an express PTIO	The CPP application does not qualify for an express PTIO.
(H)	Site approval for portable sources	The CPP application does not include any portable emissions units.
(I)	Consideration the social and economic impact of the air contaminants, water pollutants, or other adverse environmental impact	The proposed CPP facility is located at a property that is currently licensed as a MSW transfer facility. Other than air emissions, the impact from this facility will be unchanged from the current facility.
(J)	Coordinate review with other Ohio EPA Divisions	The proposed CPP facility is located at a property that is currently licensed as a MSW transfer facility. The criteria for siting a solid waste incineration or waste-to-energy facility are no more stringent than the criteria for siting the transfer facility that is currently located at this property.

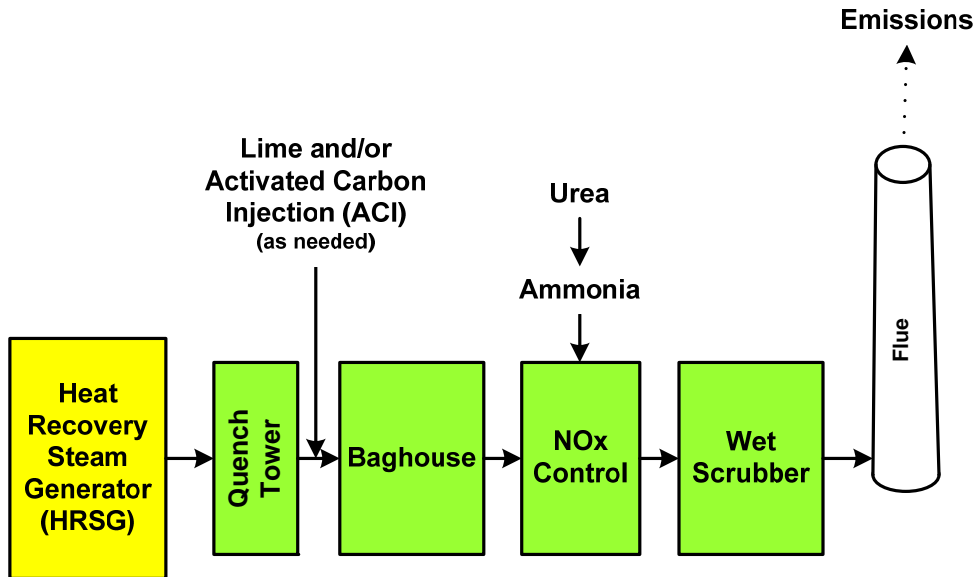
## Best Available Technology (BAT)

Best Available Technology (BAT) is defined in OAC rule 3745-31-01(T) as follows:

*"Best available technology" or "BAT" means any combination of work practices, raw material specifications, throughput limitations, source design characteristics, an evaluation of the annualized cost per ton of air pollutant removed, and air pollution control devices that have been previously demonstrated to the director of environmental protection to operate satisfactorily in this state or other states with similar air quality on substantially similar air pollution sources.*

BAT is demonstrated for the proposed CPP project with the use of air pollution control technologies that have been demonstrated to be effective in controlling the pollutants subject to BAT shown in Figure 2 with the BAT emission rates summarized in Table 5.

**Figure 2**  
**Cleveland Public Power - Ridge Road**  
**MSW Gasification HRSG Project**  
**Components of the BAT Air Pollution Control System**



<b>Table 5</b> <b>Emission Control Systems and BAT Summary<sup>(1)</sup></b>			
<b>Emissions Unit(s)</b>	<b>Emission Control Technology</b>	<b>Pollutant(s) Controlled</b>	<b>BAT Stack Emission Rate(s)</b>
MSW Pre-Processing	Localized capture and baghouses venting inside the building with water mists (if needed) at building doorways	Filterable PM/PM <sub>10</sub> /PM <sub>2.5</sub>	NA
Gasifier Lines No. 1 – No. 4	Sorbent Injection (Lime and/or Activiated Carbon) as needed	Hg and “acid gases”	NA
	Baghouse	PM/PM <sub>10</sub> /PM <sub>2.5</sub> and Metal HAPs	PM/PM <sub>10</sub> /PM <sub>2.5</sub> = 6.22 lb/hr <sup>(2)</sup>
	Selective Catalytic Reduction (SCR)	NO <sub>x</sub> /NO <sub>2</sub>	NO <sub>x</sub> = 15.51 lb/hr
	Wet-Flue Gas Desulfurization (Wet-FGD)	SO <sub>2</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl, HF, other “acid gases” and PM/PM <sub>10</sub> /PM <sub>2.5</sub>	SO <sub>2</sub> = 6.19 lb/hr
	Combustion Controls	CO and VOC	CO = 6.94 lb/hr VOC = 2.10 lb/hr
Sorbent/Reagent Storage	Baghouses integral to the operation of storage silos and pneumatic transfer of materials	Filterable PM/PM <sub>10</sub> /PM <sub>2.5</sub>	NA
Residuals Storage and Load-Out	Baghouses integral to the operation of storage silos and pneumatic transfer of materials	Filterable PM/PM <sub>10</sub> /PM <sub>2.5</sub>	NA
<sup>(1)</sup> The PTIO application is based upon proprietary design and performance specifications for the BAT air pollution control system based on the Kinsei Sangyo Japan gasifiers and furnace. <sup>(2)</sup> Estimated 6.22 lb/hr (filterable + condensable). The filterable portion is 2.22 lb/hr.			

The BAT control technologies and control measures will also control emissions of “air toxics” that are regulated pursuant to OAC rule 3745-114-01. The maximum hourly emission rate for each “air toxic” has been evaluated pursuant to “Option A” of the Ohio EPA “Air Toxic Policy”. The results of that evaluation are presented in the Air Quality Impact section of this summary.

The BAT control technologies, control measures and emission limitations associated with the use of the Kinsei Sangyo Japan proprietary design are equal to or more stringent than the requirements specified in the Ohio State Implementation Plan (SIP) and the applicable federal NSPS at 40 CFR Part 60 Subpart AAAAA. Table 6 presents a comparison to benchmark the BAT limits proposed for the CPP project (converted to the relevant units) versus the emission limits in the NSPS Subpart Eb, the NSPS Subpart AAAAA and the Mahoning Renewable Energy air permit (PTI No. 02-23003; April 3,

2009). As summarized in Table 6, the BAT limits proposed for the CPP project are equivalent to or more stringent than each of the relevant benchmarks.

<b>Table 6 CPP Proposed BAT Emission Limitations Using the Kinsei Sangyo Technology<sup>(1)</sup> vs Other Benchmark Rules and Recent Ohio EPA BAT Determinations</b>										
<b>Pollutant</b>	<b>NSPS Subpart Eb</b>		<b>NSPS Subpart AAAA</b>		<b>Ohio EPA BAT Mahoning Energy Permit</b>			<b>CPP Proposed BAT<sup>(1)</sup></b>		
	<b>mg/m<sup>3</sup></b>	<b>ppm</b>	<b>mg/m<sup>3</sup></b>	<b>ppm</b>	<b>mg/m<sup>3</sup></b>	<b>ppm</b>	<b>lb/mmBtu</b>	<b>mg/m<sup>3</sup></b>	<b>ppm</b>	<b>lb/mmBtu</b>
PM	20		24		20			20		
SO <sub>2</sub>		30		30		24			19.5	
NO <sub>x</sub>		150		150		75			68	
CO		50		50		50			50	
HCl		25		25		25			2.9	
Dioxin	1.30E-05		1.30E-05		1.30E-05			1.30E-05		
Lead	0.14		0.2		0.14			0.14		
Cadmium	0.01		0.02		0.01			0.01		
Mercury	0.05		0.08		0.05			0.05		
Ammonia						15			15	
H <sub>2</sub> SO <sub>4</sub>						2			1.2	
HF						0.5			0.5	
VOC							0.026			0.026

<sup>(1)</sup> This permit application is based on the Kinsei Sangyo Japan proprietary design and performance specifications.

### **Air Quality Impact**

Air quality modeling was completed for the maximum emission rates from the proposed CPP facility using US EPA's AERMOD dispersion model, and in accordance with the requirements of Ohio EPA Engineering Guide #69. The AERMOD dispersion modeling program includes modeling programs AERMET, AERMAP and AERMOD. The Building Profile Input Program Prime (BPIP Prime) preprocessor was run to determine the Good Engineering Practice (GEP) building dimensions for downwash calculations. Meteorological data for AERMET was National Weather Service (NWS) data for years 1984-1988 (Surface: Cleveland, Ohio; Upper Air: Buffalo, NY). The modeling domains obtained for use in AERMAP include Cleveland North, Cleveland South and Lakewood.

The primary receptor grid places receptors at 50 meter intervals along the property line to a distance of 500 meters from the site. A second 100 meter interval receptor grid extends from 500 meters to a distance to 2,000 meters (well over one mile). A total of 2,498 property line and off-site receptors are included in the analysis.

Building parameters were entered according to the site layout. Stacks were located with two flues at the NE corner and two flues at the NW corner of the gasifier building.

Ohio EPA Engineering Guide #69 requires that an air quality modeling analysis be performed for the air pollutants and averaging times presented in Table 7. Although air quality modeling is not required pursuant to Ohio EPA Engineering Guide #69 for mercury or dioxin, CPP elected to include modeling for those two pollutants to

demonstrate the impact from the proposed facility is far less than authorized by the Ohio EPA Air Toxic Policy “Option A”.

<b>Table 7 Ohio EPA (OEPA) Air Quality Modeling Emission Thresholds</b>		
<b>Air Pollutant</b>	<b>OEPA Engineering Guide #69 Modeling Thresholds (TPY)</b>	<b>AQ Modeling Required for the Proposed CPP Project? (Y/N)</b>
PM <sub>2.5</sub> (Particulate Matter less than or equal to 2.5 microns in diameter)	10 <sup>(1)</sup>	Y
PM <sub>10</sub> (Particulate Matter less than or equal to 10 microns in diameter)	10	Y
Sulfur Dioxide (SO <sub>2</sub> )	25	Y
Nitrogen Dioxide (NO <sub>2</sub> )	25	Y
Carbon Monoxide (CO)	100	Y
Lead (Pb)	0.6	N
Air Toxics	Hydrogen Chloride (HCl)	Y
	Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	Y
	Mercury (Hg)	N
	Dioxin	N
	Lead Oxides	N
	Cadmium (Cd)	N
	Hydrogen Fluoride (HF)	N
<sup>(1)</sup> Engineering Guide #69 does not identify a modeling threshold for PM <sub>2.5</sub> . This analysis assumes Ohio EPA will require PM <sub>2.5</sub> air quality modeling at the same threshold as PM <sub>10</sub> .		

Table 8 presents the maximum off-site air quality impact that Ohio EPA rules and guidelines deem acceptable for each pollutant for which air quality modeling is required.

<b>Table 8 Required Demonstrations for Air Quality Modeling</b>		
<b>Air Pollutant</b>	<b>Target Concentrations</b>	
PM <sub>2.5</sub> (Particulate Matter less than or equal to 2.5 microns in diameter)	Demonstrate compliance with the annual and 24-hr NAAQS (15 µg/m <sup>3</sup> and 35 µg/m <sup>3</sup> , respectively).	
PM <sub>10</sub> (Particulate Matter less than or equal to 10 microns in diameter)	Demonstrate compliance with Ohio EPA Acceptable Incremental Impact (15 µg/m <sup>3</sup> ).	
Sulfur Dioxide (SO <sub>2</sub> )	Demonstrate compliance with the 1-hr NAAQS (197 µg/m <sup>3</sup> ) and demonstrate compliance with the annual and 24-hr Ohio EPA Acceptable Incremental Impact (45.5 µg/m <sup>3</sup> and 10 µg/m <sup>3</sup> , respectively).	
Nitrogen Dioxide (NO <sub>2</sub> )	Demonstrate compliance with the 1-hr NAAQS (188 µg/m <sup>3</sup> ) and demonstrate compliance with the annual Ohio EPA Acceptable Incremental Impact (12.5 µg/m <sup>3</sup> ).	
Carbon Monoxide (CO)	Demonstrate compliance with the 1-hr and 8-hr Ohio EPA Acceptable Incremental Impact (10,000 µg/m <sup>3</sup> and 2,500 µg/m <sup>3</sup> , respectively).	
Air Toxics	Hydrogen Chloride (HCl)	Demonstrate compliance with the Maximum Acceptable Ground Level Concentration (MAGLC) established by the Ohio EPA Air Toxic Policy “Option A”.
	Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	
	Mercury (Hg)	
	Dioxin	

Air quality modeling for each air pollutant was performed in accordance with the BAT emission limits associated with the use of the Kinsei Sangyo Japan proprietary design for the proposed CPP facility. The predicted maximum off-site air quality impact for each pollutant emitted by the operation of the proposed CPP facility is well within the guidelines established by Ohio EPA as summarized in Table 9a through Table 9n.

<b>Table 9a</b> <b>Annual PM<sub>2.5</sub> NAAQS Analysis</b> <b>@ 6.22 lb/hr = 0.78 g/sec</b>				
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Average Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Post Processor Value<sup>(1)</sup> (µg/m<sup>3</sup>)</b>	<b>NAAQS (µg/m<sup>3</sup>)</b>
1984	4.45	4.11	5.73	15
1985	5.23	4.82		
1986	6.02	5.56		
1987	6.34	5.85		
1988	6.62	6.11		
<sup>(1)</sup> Post Processor PM <sub>2.5</sub> values were obtained using the EPA methodology inherent in the Bee-Line “PM Post” software. PM Post annual NAAQS calculations are completed using the EPA's guidance that the NAAQS value be calculated as the average of the annual mean PM <sub>2.5</sub> concentration over 3 years of monitoring. Calculations are done at each receptor; the highest of these values is the design value presented above.				

<b>Table 9b</b> <b>24- hour PM<sub>2.5</sub> NAAQS Analysis</b> <b>@ 6.22 lb/hr = 0.78 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Post Processor Value<sup>(1)</sup> (µg/m<sup>3</sup>)</b>	<b>NAAQS (µg/m<sup>3</sup>)</b>
1984	22.42	19.76	35
1985	21.33		
1986	21.95		
1987	23.31		
1988	19.96		
<sup>(1)</sup> Post Processor PM <sub>2.5</sub> values were obtained using the EPA methodology inherent in the Bee-Line “PM Post” software. PM Post 24-hr averaging values are calculated using the EPA's guidance that the 24-hr PM <sub>2.5</sub> NAAQS calculation be the “average of the 98th-percentile 24-hour values over 3 years of monitoring”. Calculations are done at each receptor; the highest of these values is the design value presented above.			

<b>Table 9c</b> <b>24-Hour PM<sub>10</sub> Ohio Acceptable Incremental Impact Analysis</b> <b>@ 2.22 lb/hr = 0.28 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Second High Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Ohio Acceptable Incremental Impact (µg/m<sup>3</sup>)</b>
1984	8.00	7.11	15
1985	7.61	7.05	
1986	7.83	7.33	
1987	8.32	7.58	
1988	7.12	6.93	

<b>Table 9d</b> <b>1-Hour SO<sub>2</sub> NAAQS Analysis</b> <b>@ 6.19 lb/hr = 0.78 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Post Processor Value<sup>(1)</sup> (µg/m<sup>3</sup>)</b>	<b>NAAQS (µg/m<sup>3</sup>)</b>
1984	50.06	44.59	197
1985	50.33		
1986	59.18		
1987	48.91		
1988	55.05		
<sup>(1)</sup> Post Processor SO <sub>2</sub> values were obtained using the EPA methodology inherent in the Bee-Line "SO2 Post" software. SO <sub>2</sub> Post values are calculated using the EPA's guidance that the 1-hr NAAQS calculation be the "3-year average of the 99th-percentile of the annual distribution of daily maximum 1-hour concentrations." Calculations are done at each receptor; the highest of these values is the design value presented above.			

<b>Table 9e</b> <b>Annual SO<sub>2</sub> Ohio Acceptable Incremental Impact Analysis</b> <b>@ 6.19 lb/hr = 0.78 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Adjusted Predicted Off-Site Impact<sup>(1)</sup> (µg/m<sup>3</sup>)</b>	<b>Ohio Acceptable Incremental Impact (µg/m<sup>3</sup>)</b>
1984	4.43	4.09	10
1985	5.20	4.80	
1986	6.00	5.54	
1987	6.31	5.83	
1988	6.59	6.09	
<sup>(1)</sup> The adjusted value is the maximum predicted off-site concentration with an annual use factor of 92%.			



<b>Table 9f</b> <b>24-Hour SO<sub>2</sub> Ohio Acceptable Incremental Impact Analysis</b> <b>@ 6.19 lb/hr = 0.78 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Second High Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Ohio Acceptable Incremental Impact (µg/m<sup>3</sup>)</b>
1984	22.33	19.83	45.5
1985	21.24	19.67	
1986	21.86	20.44	
1987	23.21	21.16	
1988	19.88	19.32	

<b>Table 9g</b> <b>1- hour NO<sub>2</sub> NAAQS Analysis</b> <b>@ 11.63 lb/hr = 1.47 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Post Processor Value<sup>(1)</sup> (µg/m<sup>3</sup>)</b>	<b>NAAQS (µg/m<sup>3</sup>)</b>
1984	94.05	79.66	188
1985	94.55		
1986	111.19		
1987	91.90		
1988	103.43		
<sup>(1)</sup> Post Processor NO <sub>2</sub> values were obtained using the EPA methodology inherent in the Bee-Line “NO <sub>2</sub> Post” software. NO <sub>2</sub> Post values are calculated using the EPA's guidance that the NAAQS standard be the “3-year average of the 98th-percentile of the annual distribution of daily maximum 1-hour concentrations”. Calculations are done at each receptor; the highest of these values is the design value presented above.			

<b>Table 9h</b> <b>Annual NO<sub>2</sub> Ohio Acceptable Incremental Impact Analysis</b> <b>@ 11.63 lb/hr = 1.47 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (µg/m<sup>3</sup>)</b>	<b>Adjusted Predicted Off-Site Impact<sup>(1)</sup> (µg/m<sup>3</sup>)</b>	<b>Ohio Acceptable Incremental Impact (µg/m<sup>3</sup>)</b>
1984	8.33	7.59	12.5
1985	9.78	8.91	
1986	11.27	10.27	
1987	11.86	10.81	
1988	12.39	11.29	
<sup>(1)</sup> The adjusted value is the maximum predicted off-site concentration with an annual use factor of 92%.			

<b>Table 9i</b> <b>1- hour CO Ohio Acceptable Incremental Impact Analysis</b> <b>@ 6.94 lb/hr = 0.88 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Second High Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Ohio Acceptable Incremental Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>
1984	56.13	53.86	10,000
1985	56.43	53.55	
1986	66.36	58.63	
1987	54.85	51.19	
1988	61.72	61.10	

<b>Table 9j</b> <b>8- hour CO Ohio Acceptable Incremental Impact Analysis</b> <b>@ 6.94 lb/hr = 0.88 g/sec</b>			
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Second High Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Ohio Acceptable Incremental Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>
1984	33.32	29.28	2,500
1985	30.52	28.45	
1986	28.93	27.12	
1987	34.11	29.77	
1988	33.64	30.25	

<b>Table 9k</b> <b>1- hour HCl MAGLC Analysis</b> <b>@ 0.52 lb/hr = 0.07 g/sec</b>		
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>HCl MAGLC (<math>\mu\text{g}/\text{m}^3</math>)</b>
1984	4.30	2,199
1985	4.32	
1986	5.08	
1987	4.20	
1988	4.73	

<b>Table 9l</b> <b>1- hour H<sub>2</sub>SO<sub>4</sub> MAGLC Analysis</b> <b>@ 0.58 lb/hr = 0.07 g/sec</b>		
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>H<sub>2</sub>SO<sub>4</sub> MAGLC (<math>\mu\text{g}/\text{m}^3</math>)</b>
1984	4.72	200
1985	4.74	
1986	5.58	
1987	4.61	
1988	5.19	

<b>Table 9m</b> <b>1- hour Mercury MAGLC Analysis</b> <b>@ 0.006 lb/hr = 0.0007 g/sec</b>		
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Mercury MAGLC (<math>\mu\text{g}/\text{m}^3</math>)</b>
1984	0.04	10
1985	0.05	
1986	0.05	
1987	0.04	
1988	0.05	

<b>Table 9n</b> <b>1- hour Dioxin MAGLC Analysis</b> <b>@ 1.44E-06 lb/hr = 1.81E-07 g/sec</b>		
<b>Year</b>	<b>Maximum Predicted Off-Site Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Dioxin MAGLC<sup>(1)</sup> (<math>\mu\text{g}/\text{m}^3</math>)</b>
1984	1.17E-05	2.00E-03
1985	1.17E-05	
1986	1.38E-05	
1987	1.14E-05	
1988	1.28E-05	
<sup>(1)</sup> The dioxin MAGLC was calculated based on the assumption that all of the dioxin emissions are 2,3,7,8-TCDD. This MAGLC is based on recommended TWA exposure limits that have not yet been adopted into the ACGIH TLV handbook.		

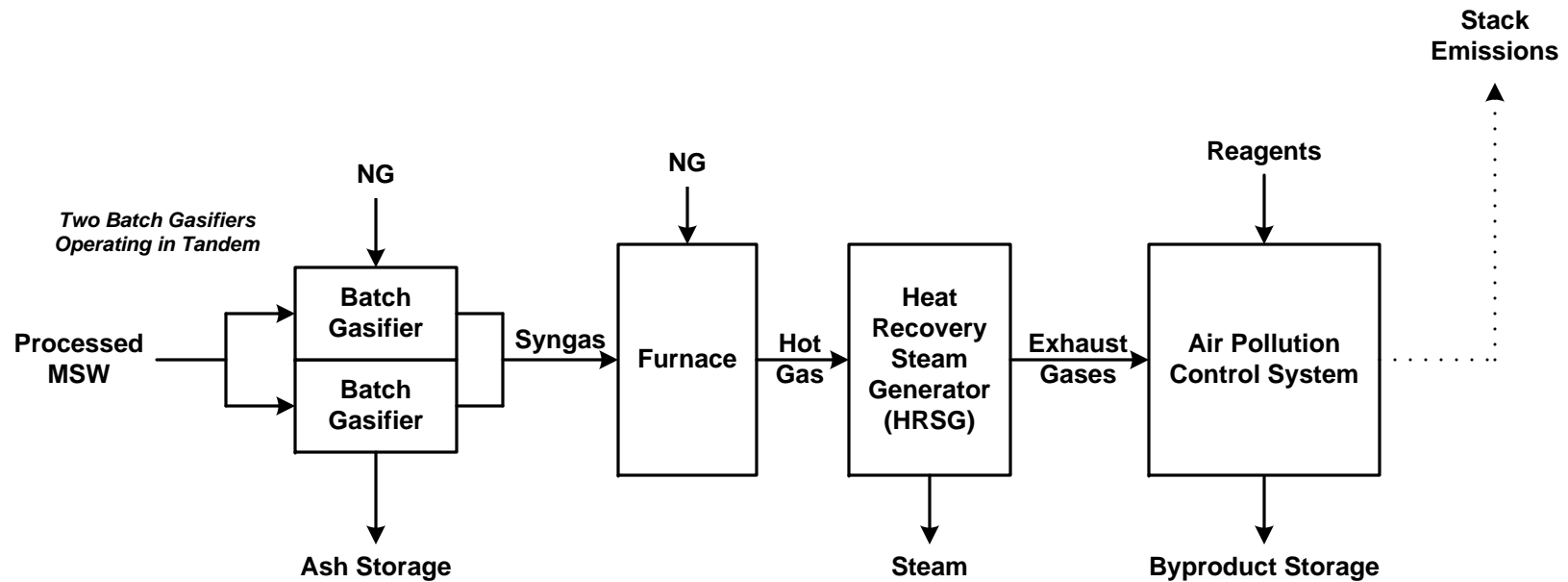
The AERMOD input and output files associated with each pollutant have been submitted to the Ohio EPA.

**Cleveland Public Power - Ridge Road  
MSW Gasification HRSG Project  
Emissions from Kinsei Sangyo Gasifier Lines 1 - 4\***

Pollutant	Emissions for Each Gasifier Line				Total TPY Emissions 4 Gasifier/Furnace/HRSG Lines		NSR Threshold	112(g) Threshold
	lb/hr	kg/day	lb/day	TPY	8,760 hours 100%	92% Use Factor	TPY	TPY
PM	2.22	24.17	53.29	9.72	38.90	35.7	<100	
PM(F+C)	6.22	67.67	149.20	27.23	108.92	99.8	<100	
SO <sub>2</sub>	6.19	67.39	148.60	27.12	108.48	99.4	<100	
NO <sub>2</sub>	11.63	126.58	279.10	50.94	203.74	186.8	<250	
NO <sub>x</sub>	15.51	168.77	372.13	67.91	271.66	249.0	<250	
CO	6.94	75.55	166.58	30.40	121.60	111.5	<250	
VOC	2.10		50.44	9.21	36.82	33.75	<250	
H <sub>2</sub> SO <sub>4</sub>	0.58	6.35	14.00	2.55	10.22	9.37	<250	
Lead (Pb)	0.02	0.17	0.37	0.07	0.27	0.25	<250	
Ammonia	1.27	13.78	30.38	5.55	22.18	20.33		
<b>HAPs:</b>								
HCl	0.52	5.71	12.58	2.30	9.18	8.42		<10
Dioxin	0.000001	0.00002	0.00003	0.00001	0.000025	0.000023		<10
Cadmium (Cd)	0.001	0.01	0.027	0.005	0.02	0.02		<10
Mercury (Hg)	0.01	0.06	0.13	0.02	0.10	0.09		<10
HF	0.05	0.54	1.19	0.22	0.87	0.80		<10
<b>Total HAPs</b>	0.58		13.93	2.54	10.17	9.32		<25

*\*Based on Kinsei Sangyo Japan proprietary design and performance specifications.*

Cleveland Public Power  
Ridge Road  
MSW Gasification HRSG Project  
Process Flow Diagram Gasifier Line No. 1\*



*\*This application is based on Kinsei Sangyo Japan proprietary design and performance specifications.*

FOR OHIO EPA USE	
FACILITY ID:	
EU ID: _____	PTI #: _____

## EMISSIONS ACTIVITY CATEGORY FORM GENERAL PROCESS OPERATION

*This form is to be completed for each process operation when there is no specific emissions activity category (EAC) form applicable. If there is more than one end product for this process, copy and complete this form for each additional product (see instructions). Several State/Federal regulations which may apply to process operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.*

*The PTIO application is based on Kinsei Sangyo Japan proprietary design and performance specifications. There are two batch Kinsei Sangyo gasifiers operating in tandem for each gasification line. This form includes information/data for a single batch Kinsei Sangyo gasifier.*

1. Reason this form is being submitted (Check one)
- New Permit     Renewal or Modification of Air Permit Number(s) (e.g. P001)

2. Maximum Operating Schedule: 12 hours per day; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. *There are two batch Kinsei Sangyo gasifiers operating in tandem for each gasification line. This form includes information/data for a single batch Kinsei Sangyo gasifier.*

3. End product of this process: *Syngas*

4. Hourly production rates (indicate appropriate units). Please see the instructions for clarification of "Maximum" and "Average" for new versus existing operations:

Hourly	Rate	Units (e.g., widgets)
Average production	<i>Production Rate Redacted</i>	<i>cf/hr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>cf/hr</i>

5. Annual production rates (indicate appropriate units) Please see the instructions for clarification of "Maximum" and "Actual" for new versus existing operations:

Annual	Rate	Units (e.g., widgets)
Actual production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>

6. Type of operation (please check one):

- Continuous
- Batch (please complete items below)

Minimum cycle time (minutes): *720 (12 hours)*

Minimum time between cycles (minutes): *720 (12 hours)*

Maximum number of cycles per daily 24 hour period: *1 (one 12-hour cycle per batch gasifier/day)*

(Note: include cycle time and set up/clean up time.)

"Cycle" refers to the time the equipment is in operation.

7. Materials used in process at maximum hourly production rate (add rows/pages as needed):

Material	Physical State at Standard Conditions	Principle Use	Amount**
<i>Processed MSW</i>	<i>Solid</i>	<i>Feedstock for Gasifier</i>	<i>70.4 tons/batch = 70.4 tons per day per gasifier</i>

\*\* Please indicate the amount and rate (e.g., lbs/hr, gallons/hr, lbs/cycle, etc.).

8. Please provide a narrative description of the process below (e.g., coating of metal parts using high VOC content coatings for the manufacture of widgets; emissions controlled by thermal oxidizer...):

*Municipal solid waste (MSW) is preprocessed in a Material Recovery Facility (MRF) and blended to produce the desired characteristics (heat content, etc.) for introduction into one of the Kinsei Sangyo batch gasifiers that operate in tandem for each gasifier line. A small amount of natural gas is burned at the onset of the batch gasification process and heat for the remainder of the process is provided from the combustion of a portion of the syn gas produced. The majority of the syngas produced by the Kinsei Sangyo batch gasifiers is combusted in a furnace (refer to the Fuel Combustion EAC) to produce heat that is then converted to steam in the Heat Recovery Steam Generator (HRSG). There are no direct emissions from the operation of the batch gasifiers. The syngas produced by the Kinsei Sangyo batch gasifiers is burned in the furnace with the hot exhausts gases routed through the HRSG and then through the air pollution control system (sorbet injection, baghouse, SCR and wet-FGD) prior to discharging to the atmosphere from the stack.*

## EMISSIONS ACTIVITY CATEGORY FORM FUEL BURNING OPERATION

*This form is to be completed for each fuel burning operation. State/Federal regulations which may apply to fuel burning operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.*

1. Reason this form is being submitted (check one)

- New Permit     Renewal or Modification of Air Permit Number(s) (e.g. B001)

2. Maximum Operating Schedule: 24 hours per day; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. \_\_\_\_\_

3. Input Capacity (million Btu/hr):

Rated <small>(Indicate units if other than mmBtu/hr)</small>	Maximum <small>(Indicate units if other than mmBtu/hr)</small>	Normal <small>(Indicate units if other than mmBtu/hr)</small>
<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>

4. Output Capacity:

Rated <small>(lb steam/hr)</small>	Maximum <small>(lb steam/hr)</small>	Normal <small>(lb steam/hr)</small>
<i>Steam Output Redacted</i>	<i>Steam Output Redacted</i>	<i>Steam Output Redacted</i>

- Not applicable - operation does not produce steam.

5. Percent of Operating Time Used for:

Process: 100 %  
 Space Heat: \_\_\_\_\_ %

6. Type of Draft (check one):

- Natural     Induced     Forced

7. Type of combustion monitoring (check one):

- Fuel/Air Ratio     Oxygen     None  
 Other (describe) Temperature



8. Type of Fuel Fired (complete all that apply):

Fuel*	Fired as...	Min. Heat Content (Btu/unit)	Max. % Ash	Max. % Sulfur	Max. Annual Fuel Use	Average Hourly Fuel Use	Maximum Hourly Fuel Use
Coal	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
No. 2 Fuel Oil	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Other** Oil	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Natural Gas	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Backup	1,000 Btu/cf		0.01	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>
Natural Gas	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Backup	1,000 Btu/cf		0.01	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>
Wood	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
LPG	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Other Syngas	<input checked="" type="checkbox"/> Primary <input type="checkbox"/> Backup	Redacted Btu/cf			Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>

Please identify all combinations of fuels that are co-fired: Syngas and natural gas

Identify other fuel(s): Syngas produced by Kinsei Sangyo gasifier

**Coal-Fired Units**

9. Type of Coal Firing (check one):

- Pulverized-Wet Bottom     Hand-Fired     Chain Grate     Traveling Grate  
 Pulverized-Dry Bottom     Cyclones     Spreader Stoker     Fluidized Bed  
 Underfeed Stoker     Other (describe) \_\_\_\_\_

10. Flyash Reinjection:

- Yes     No

11. Overfire Air:

- Yes     No

**Oil-Fired Units**

12. Oil Preheater:

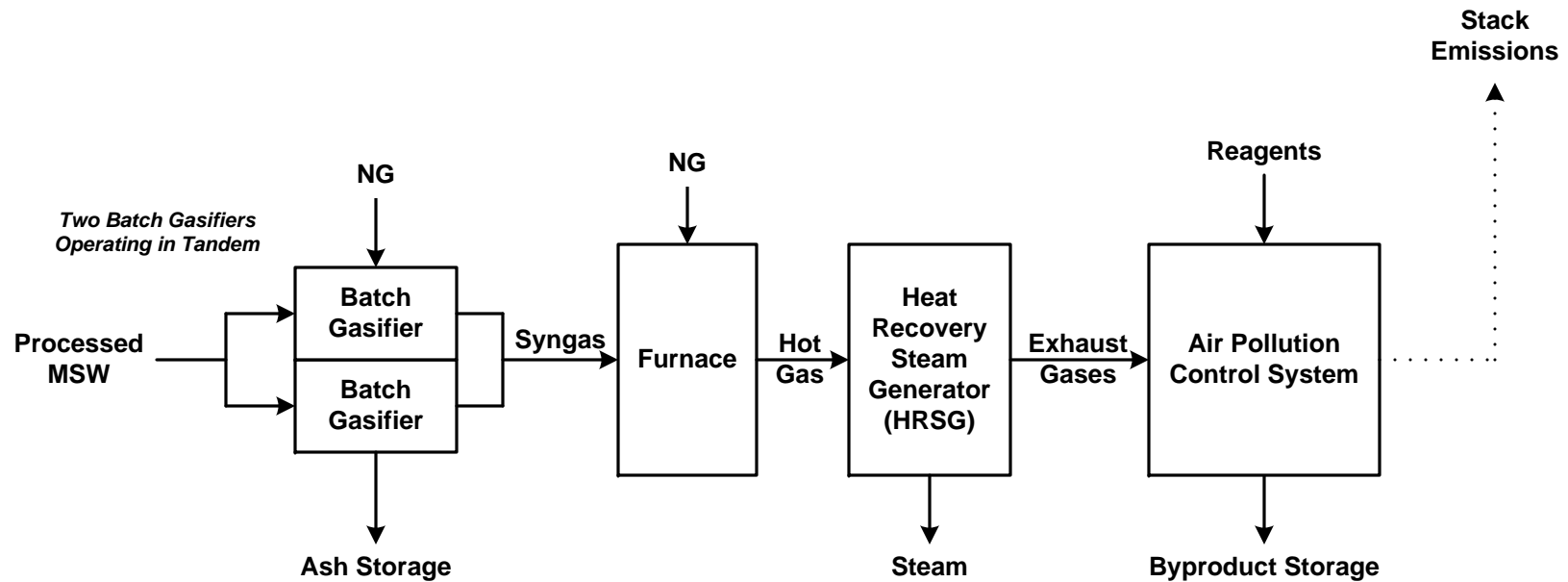
- Yes - Indicate Temperature \_\_\_\_\_ deg. F  
 No

**Cleveland Public Power - Ridge Road  
MSW Gasification HRSG Project  
Emissions from Kinsei Sangyo Gasifier Lines 1 - 4\***

Pollutant	Emissions for Each Gasifier Line				Total TPY Emissions 4 Gasifier/Furnace/HRSG Lines		NSR Threshold	112(g) Threshold
	lb/hr	kg/day	lb/day	TPY	8,760 hours 100%	92% Use Factor	TPY	TPY
PM	2.22	24.17	53.29	9.72	38.90	35.7	<100	
PM(F+C)	6.22	67.67	149.20	27.23	108.92	99.8	<100	
SO <sub>2</sub>	6.19	67.39	148.60	27.12	108.48	99.4	<100	
NO <sub>2</sub>	11.63	126.58	279.10	50.94	203.74	186.8	<250	
NO <sub>x</sub>	15.51	168.77	372.13	67.91	271.66	249.0	<250	
CO	6.94	75.55	166.58	30.40	121.60	111.5	<250	
VOC	2.10		50.44	9.21	36.82	33.75	<250	
H <sub>2</sub> SO <sub>4</sub>	0.58	6.35	14.00	2.55	10.22	9.37	<250	
Lead (Pb)	0.02	0.17	0.37	0.07	0.27	0.25	<250	
Ammonia	1.27	13.78	30.38	5.55	22.18	20.33		
<b>HAPs:</b>								
HCl	0.52	5.71	12.58	2.30	9.18	8.42		<10
Dioxin	0.000001	0.00002	0.00003	0.00001	0.000025	0.000023		<10
Cadmium (Cd)	0.001	0.01	0.027	0.005	0.02	0.02		<10
Mercury (Hg)	0.01	0.06	0.13	0.02	0.10	0.09		<10
HF	0.05	0.54	1.19	0.22	0.87	0.80		<10
<b>Total HAPs</b>	0.58		13.93	2.54	10.17	9.32		<25

*\*Based on Kinsei Sangyo Japan proprietary design and performance specifications.*

Cleveland Public Power  
Ridge Road  
MSW Gasification HRSG Project  
Process Flow Diagram Gasifier Line No. 2\*



*\*This application is based on Kinsei Sangyo Japan proprietary design and performance specifications.*

FOR OHIO EPA USE	
FACILITY ID:	
EU ID: _____	PTI #: _____

## EMISSIONS ACTIVITY CATEGORY FORM GENERAL PROCESS OPERATION

*This form is to be completed for each process operation when there is no specific emissions activity category (EAC) form applicable. If there is more than one end product for this process, copy and complete this form for each additional product (see instructions). Several State/Federal regulations which may apply to process operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.*

*The PTIO application is based on Kinsei Sangyo Japan proprietary design and performance specifications. There are two batch Kinsei Sangyo gasifiers operating in tandem for each gasification line. This form includes information/data for a single batch Kinsei Sangyo gasifier.*

1. Reason this form is being submitted (Check one)
- New Permit     Renewal or Modification of Air Permit Number(s) (e.g. P001)

2. Maximum Operating Schedule: 12 hours per day; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. *There are two batch Kinsei Sangyo gasifiers operating in tandem for each gasification line. This form includes information/data for a single batch Kinsei Sangyo gasifier.*

3. End product of this process: *Syngas*

4. Hourly production rates (indicate appropriate units). Please see the instructions for clarification of "Maximum" and "Average" for new versus existing operations:

Hourly	Rate	Units (e.g., widgets)
Average production	<i>Production Rate Redacted</i>	<i>cf/hr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>cf/hr</i>

5. Annual production rates (indicate appropriate units) Please see the instructions for clarification of "Maximum" and "Actual" for new versus existing operations:

Annual	Rate	Units (e.g., widgets)
Actual production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>

6. Type of operation (please check one):

- Continuous
- Batch (please complete items below)

Minimum cycle time (minutes): *720 (12 hours)*

Minimum time between cycles (minutes): *720 (12 hours)*

Maximum number of cycles per daily 24 hour period: *1 (one 12-hour cycle per batch gasifier/day)*

(Note: include cycle time and set up/clean up time.)

"Cycle" refers to the time the equipment is in operation.

7. Materials used in process at maximum hourly production rate (add rows/pages as needed):

Material	Physical State at Standard Conditions	Principle Use	Amount**
<i>Processed MSW</i>	<i>Solid</i>	<i>Feedstock for Gasifier</i>	<i>70.4 tons/batch = 70.4 tons per day per gasifier</i>

\*\* Please indicate the amount and rate (e.g., lbs/hr, gallons/hr, lbs/cycle, etc.).

8. Please provide a narrative description of the process below (e.g., coating of metal parts using high VOC content coatings for the manufacture of widgets; emissions controlled by thermal oxidizer...):

*Municipal solid waste (MSW) is preprocessed in a Material Recovery Facility (MRF) and blended to produce the desired characteristics (heat content, etc.) for introduction into one of the Kinsei Sangyo batch gasifiers that operate in tandem for each gasifier line. A small amount of natural gas is burned at the onset of the batch gasification process and heat for the remainder of the process is provided from the combustion of a portion of the syn gas produced. The majority of the syngas produced by the Kinsei Sangyo batch gasifiers is combusted in a furnace (refer to the Fuel Combustion EAC) to produce heat that is then converted to steam in the Heat Recovery Steam Generator (HRSG). There are no direct emissions from the operation of the batch gasifiers. The syngas produced by the Kinsei Sangyo batch gasifiers is burned in the furnace with the hot exhausts gases routed through the HRSG and then through the air pollution control system (sorbet injection, baghouse, SCR and wet-FGD) prior to discharging to the atmosphere from the stack.*

## EMISSIONS ACTIVITY CATEGORY FORM FUEL BURNING OPERATION

*This form is to be completed for each fuel burning operation. State/Federal regulations which may apply to fuel burning operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.*

1. Reason this form is being submitted (check one)

- New Permit     Renewal or Modification of Air Permit Number(s) (e.g. B001)

2. Maximum Operating Schedule: 24 hours per day; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. \_\_\_\_\_

3. Input Capacity (million Btu/hr):

Rated <small>(Indicate units if other than mmBtu/hr)</small>	Maximum <small>(Indicate units if other than mmBtu/hr)</small>	Normal <small>(Indicate units if other than mmBtu/hr)</small>
<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>

4. Output Capacity:

Rated <small>(lb steam/hr)</small>	Maximum <small>(lb steam/hr)</small>	Normal <small>(lb steam/hr)</small>
<i>Steam Output Redacted</i>	<i>Steam Output Redacted</i>	<i>Steam Output Redacted</i>

- Not applicable - operation does not produce steam.

5. Percent of Operating Time Used for:

Process: 100 %  
 Space Heat: \_\_\_\_\_ %

6. Type of Draft (check one):

- Natural     Induced     Forced

7. Type of combustion monitoring (check one):

- Fuel/Air Ratio     Oxygen     None  
 Other (describe) Temperature

8. Type of Fuel Fired (complete all that apply):

Fuel*	Fired as...	Min. Heat Content (Btu/unit)	Max. % Ash	Max. % Sulfur	Max. Annual Fuel Use	Average Hourly Fuel Use	Maximum Hourly Fuel Use
Coal	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
No. 2 Fuel Oil	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Other** Oil	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Natural Gas	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Backup	1,000 Btu/cf		0.01	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>
Natural Gas	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Backup	1,000 Btu/cf		0.01	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>
Wood	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
LPG	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Other Syngas	<input checked="" type="checkbox"/> Primary <input type="checkbox"/> Backup	Redacted Btu/cf			Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>

Please identify all combinations of fuels that are co-fired: Syngas and natural gas

Identify other fuel(s): Syngas produced by Kinsei Sangyo gasifier

**Coal-Fired Units**

9. Type of Coal Firing (check one):

- Pulverized-Wet Bottom     Hand-Fired     Chain Grate     Traveling Grate  
 Pulverized-Dry Bottom     Cyclones     Spreader Stoker     Fluidized Bed  
 Underfeed Stoker     Other (describe) \_\_\_\_\_

10. Flyash Reinjection:

- Yes     No

11. Overfire Air:

- Yes     No

**Oil-Fired Units**

12. Oil Preheater:

- Yes - Indicate Temperature \_\_\_\_\_ deg. F  
 No

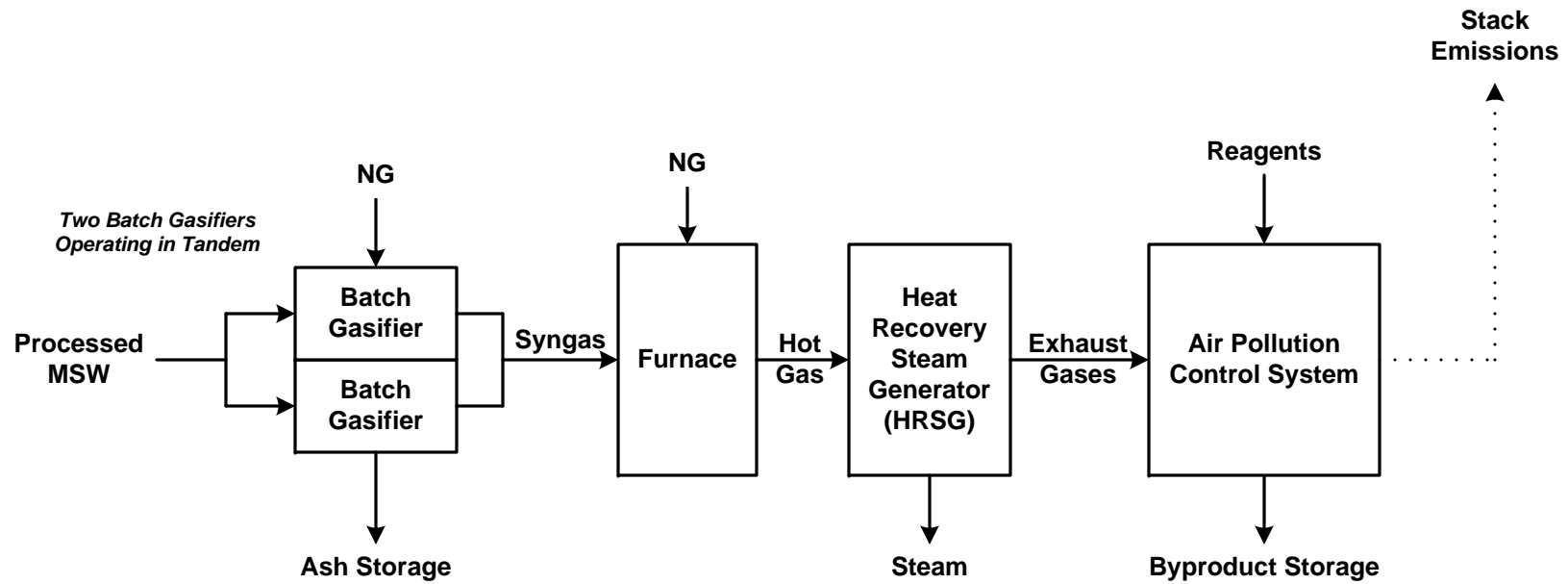
**Cleveland Public Power - Ridge Road  
MSW Gasification HRSG Project  
Emissions from Kinsei Sangyo Gasifier Lines 1 - 4\***

Pollutant	Emissions for Each Gasifier Line				Total TPY Emissions 4 Gasifier/Furnace/HRSG Lines		NSR Threshold	112(g) Threshold
	lb/hr	kg/day	lb/day	TPY	8,760 hours 100%	92% Use Factor	TPY	TPY
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PM(F+C)	6.22	67.67	149.20	27.23	108.92	99.8	<100	
SO <sub>2</sub>	6.19	67.39	148.60	27.12	108.48	99.4	<100	
NO <sub>2</sub>	11.63	126.58	279.10	50.94	203.74	186.8	<250	
NO <sub>x</sub>	15.51	168.77	372.13	67.91	271.66	249.0	<250	
CO	6.94	75.55	166.58	30.40	121.60	111.5	<250	
VOC	2.10		50.44	9.21	36.82	33.75	<250	
H <sub>2</sub> SO <sub>4</sub>	0.58	6.35	14.00	2.55	10.22	9.37	<250	
Lead (Pb)	0.02	0.17	0.37	0.07	0.27	0.25	<250	
Ammonia	1.27	13.78	30.38	5.55	22.18	20.33		
<b>HAPs:</b>								
HCl	0.52	5.71	12.58	2.30	9.18	8.42		<10
Dioxin	0.000001	0.00002	0.00003	0.00001	0.000025	0.000023		<10
Cadmium (Cd)	0.001	0.01	0.027	0.005	0.02	0.02		<10
Mercury (Hg)	0.01	0.06	0.13	0.02	0.10	0.09		<10
HF	0.05	0.54	1.19	0.22	0.87	0.80		<10
<b>Total HAPs</b>	0.58		13.93	2.54	10.17	9.32		<25

*\*Based on Kinsei Sangyo Japan proprietary design and performance specifications.*



Cleveland Public Power  
Ridge Road  
MSW Gasification HRSG Project  
Process Flow Diagram Gasifier Line No. 3\*



*\*This application is based on Kinsei Sangyo Japan proprietary design and performance specifications.*

FOR OHIO EPA USE	
FACILITY ID:	
EU ID: _____	PTI #: _____

## EMISSIONS ACTIVITY CATEGORY FORM GENERAL PROCESS OPERATION

*This form is to be completed for each process operation when there is no specific emissions activity category (EAC) form applicable. If there is more than one end product for this process, copy and complete this form for each additional product (see instructions). Several State/Federal regulations which may apply to process operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.*

*The PTIO application is based on Kinsei Sangyo Japan proprietary design and performance specifications. There are two batch Kinsei Sangyo gasifiers operating in tandem for each gasification line. This form includes information/data for a single batch Kinsei Sangyo gasifier.*

1. Reason this form is being submitted (Check one)

New Permit     Renewal or Modification of Air Permit Number(s) (e.g. P001)

2. Maximum Operating Schedule: 12 hours per day; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. *There are two batch Kinsei Sangyo gasifiers operating in tandem for each gasification line. This form includes information/data for a single batch Kinsei Sangyo gasifier.*

3. End product of this process: *Syngas*

4. Hourly production rates (indicate appropriate units). Please see the instructions for clarification of "Maximum" and "Average" for new versus existing operations:

Hourly	Rate	Units (e.g., widgets)
Average production	<i>Production Rate Redacted</i>	<i>cf/hr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>cf/hr</i>

5. Annual production rates (indicate appropriate units) Please see the instructions for clarification of "Maximum" and "Actual" for new versus existing operations:

Annual	Rate	Units (e.g., widgets)
Actual production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>

6. Type of operation (please check one):

- Continuous
- Batch (please complete items below)

Minimum cycle time (minutes): *720 (12 hours)*

Minimum time between cycles (minutes): *720 (12 hours)*

Maximum number of cycles per daily 24 hour period: *1 (one 12-hour cycle per batch gasifier/day)*

(Note: include cycle time and set up/clean up time.)

"Cycle" refers to the time the equipment is in operation.

7. Materials used in process at maximum hourly production rate (add rows/pages as needed):

Material	Physical State at Standard Conditions	Principle Use	Amount**
<i>Processed MSW</i>	<i>Solid</i>	<i>Feedstock for Gasifier</i>	<i>70.4 tons/batch = 70.4 tons per day per gasifier</i>

\*\* Please indicate the amount and rate (e.g., lbs/hr, gallons/hr, lbs/cycle, etc.).

8. Please provide a narrative description of the process below (e.g., coating of metal parts using high VOC content coatings for the manufacture of widgets; emissions controlled by thermal oxidizer...):

*Municipal solid waste (MSW) is preprocessed in a Material Recovery Facility (MRF) and blended to produce the desired characteristics (heat content, etc.) for introduction into one of the Kinsei Sangyo batch gasifiers that operate in tandem for each gasifier line. A small amount of natural gas is burned at the onset of the batch gasification process and heat for the remainder of the process is provided from the combustion of a portion of the syn gas produced. The majority of the syngas produced by the Kinsei Sangyo batch gasifiers is combusted in a furnace (refer to the Fuel Combustion EAC) to produce heat that is then converted to steam in the Heat Recovery Steam Generator (HRSG). There are no direct emissions from the operation of the batch gasifiers. The syngas produced by the Kinsei Sangyo batch gasifiers is burned in the furnace with the hot exhausts gases routed through the HRSG and then through the air pollution control system (sorbet injection, baghouse, SCR and wet-FGD) prior to discharging to the atmosphere from the stack.*

## EMISSIONS ACTIVITY CATEGORY FORM FUEL BURNING OPERATION

*This form is to be completed for each fuel burning operation. State/Federal regulations which may apply to fuel burning operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.*

1. Reason this form is being submitted (check one)

- New Permit     Renewal or Modification of Air Permit Number(s) (e.g. B001)

2. Maximum Operating Schedule: 24 hours per day; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. \_\_\_\_\_

3. Input Capacity (million Btu/hr):

Rated <small>(Indicate units if other than mmBtu/hr)</small>	Maximum <small>(Indicate units if other than mmBtu/hr)</small>	Normal <small>(Indicate units if other than mmBtu/hr)</small>
<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>

4. Output Capacity:

Rated <small>(lb steam/hr)</small>	Maximum <small>(lb steam/hr)</small>	Normal <small>(lb steam/hr)</small>
<i>Steam Output Redacted</i>	<i>Steam Output Redacted</i>	<i>Steam Output Redacted</i>

- Not applicable - operation does not produce steam.

5. Percent of Operating Time Used for:

Process: 100 %  
 Space Heat: \_\_\_\_\_ %

6. Type of Draft (check one):

- Natural     Induced     Forced

7. Type of combustion monitoring (check one):

- Fuel/Air Ratio     Oxygen     None  
 Other (describe) Temperature

8. Type of Fuel Fired (complete all that apply):

Fuel*	Fired as...	Min. Heat Content (Btu/unit)	Max. % Ash	Max. % Sulfur	Max. Annual Fuel Use	Average Hourly Fuel Use	Maximum Hourly Fuel Use
Coal	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
No. 2 Fuel Oil	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Other** Oil	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Natural Gas	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Backup	1,000 Btu/cf		0.01	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>
Natural Gas	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Backup	1,000 Btu/cf		0.01	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>
Wood	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
LPG	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				gal	gal	gal
Other Syngas	<input checked="" type="checkbox"/> Primary <input type="checkbox"/> Backup	Redacted Btu/cf			Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>

Please identify all combinations of fuels that are co-fired: Syngas and natural gas

Identify other fuel(s): Syngas produced by Kinsei Sangyo gasifier

**Coal-Fired Units**

9. Type of Coal Firing (check one):

- Pulverized-Wet Bottom     Hand-Fired     Chain Grate     Traveling Grate  
 Pulverized-Dry Bottom     Cyclones     Spreader Stoker     Fluidized Bed  
 Underfeed Stoker     Other (describe) \_\_\_\_\_

10. Flyash Reinjection:

- Yes     No

11. Overfire Air:

- Yes     No

**Oil-Fired Units**

12. Oil Preheater:

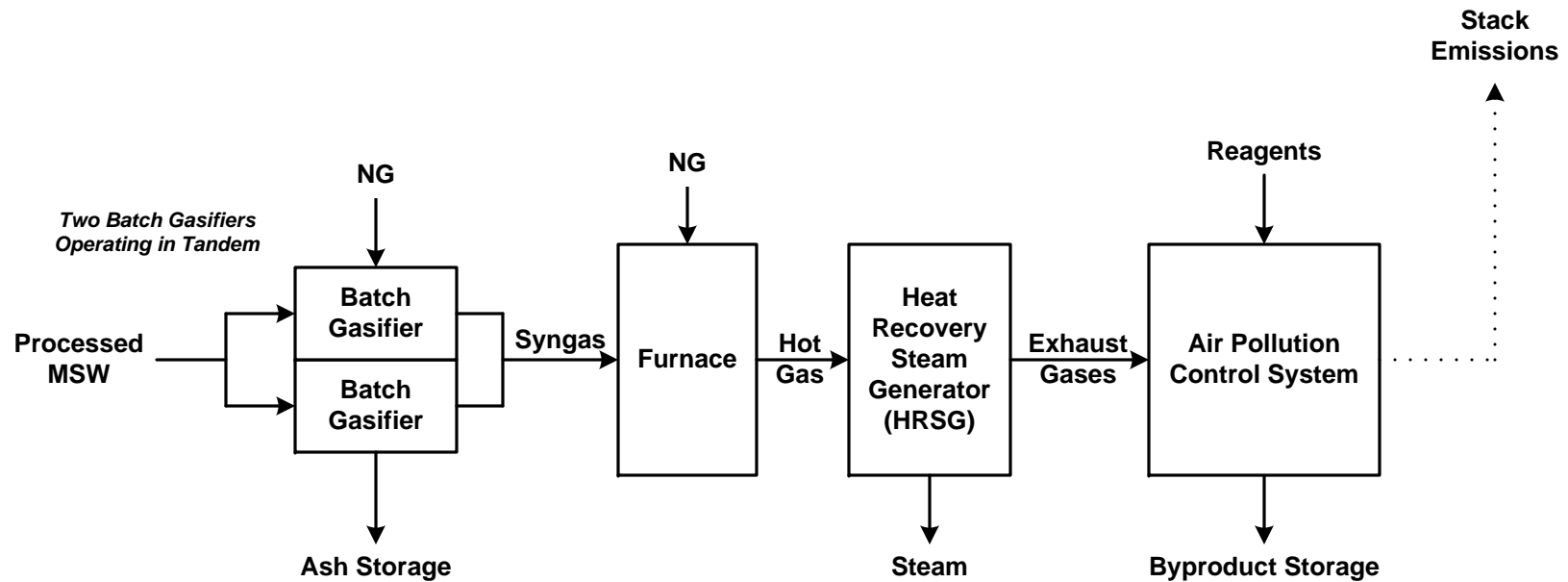
- Yes - Indicate Temperature \_\_\_\_\_ deg. F  
 No

**Cleveland Public Power - Ridge Road  
MSW Gasification HRSG Project  
Emissions from Kinsei Sangyo Gasifier Lines 1 - 4\***

Pollutant	Emissions for Each Gasifier Line				Total TPY Emissions 4 Gasifier/Furnace/HRSG Lines		NSR Threshold	112(g) Threshold
	lb/hr	kg/day	lb/day	TPY	8,760 hours 100%	92% Use Factor	TPY	TPY
PM	2.22	24.17	53.29	9.72	38.90	35.7	<100	
PM(F+C)	6.22	67.67	149.20	27.23	108.92	99.8	<100	
SO <sub>2</sub>	6.19	67.39	148.60	27.12	108.48	99.4	<100	
NO <sub>2</sub>	11.63	126.58	279.10	50.94	203.74	186.8	<250	
NO <sub>x</sub>	15.51	168.77	372.13	67.91	271.66	249.0	<250	
CO	6.94	75.55	166.58	30.40	121.60	111.5	<250	
VOC	2.10		50.44	9.21	36.82	33.75	<250	
H <sub>2</sub> SO <sub>4</sub>	0.58	6.35	14.00	2.55	10.22	9.37	<250	
Lead (Pb)	0.02	0.17	0.37	0.07	0.27	0.25	<250	
Ammonia	1.27	13.78	30.38	5.55	22.18	20.33		
<b>HAPs:</b>								
HCl	0.52	5.71	12.58	2.30	9.18	8.42		<10
Dioxin	0.000001	0.00002	0.00003	0.00001	0.000025	0.000023		<10
Cadmium (Cd)	0.001	0.01	0.027	0.005	0.02	0.02		<10
Mercury (Hg)	0.01	0.06	0.13	0.02	0.10	0.09		<10
HF	0.05	0.54	1.19	0.22	0.87	0.80		<10
<b>Total HAPs</b>	0.58		13.93	2.54	10.17	9.32		<25

*\*Based on Kinsei Sangyo Japan proprietary design and performance specifications.*

Cleveland Public Power  
Ridge Road  
MSW Gasification HRSG Project  
Process Flow Diagram Gasifier Line No. 4\*



*\*This application is based on Kinsei Sangyo Japan proprietary design and performance specifications.*

FOR OHIO EPA USE	
FACILITY ID:	
EU ID: _____	PTI #: _____

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Annual	Rate	Units (e.g., widgets)
Actual production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>
Maximum production	<i>Production Rate Redacted</i>	<i>million cf/yr</i>



6. Type of operation (please check one):

- Continuous
- Batch (please complete items below)

Minimum cycle time (minutes): *720 (12 hours)*

Minimum time between cycles (minutes): *720 (12 hours)*

Maximum number of cycles per daily 24 hour period: *1 (one 12-hour cycle per batch gasifier/day)*

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2. Maximum Operating Schedule:   24   hours per day;   365   days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. \_\_\_\_\_

3. Input Capacity (million Btu/hr):

Rated <small>(Indicate units if other than mmBtu/hr)</small>	Maximum <small>(Indicate units if other than mmBtu/hr)</small>	Normal <small>(Indicate units if other than mmBtu/hr)</small>
<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>	<i>Heat Input Rating Redacted</i>

4. Output Capacity:

Rated <small>(lb steam/hr)</small>	Maximum <small>(lb steam/hr)</small>	Normal <small>(lb steam/hr)</small>
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- Not applicable - operation does not produce steam.

5. Percent of Operating Time Used for:

Process:   100   %  
 Space Heat: \_\_\_\_\_ %

6. Type of Draft (check one):

- Natural     Induced     Forced

7. Type of combustion monitoring (check one):

- Fuel/Air Ratio     Oxygen     None  
 Other (describe)   Temperature

8. Type of Fuel Fired (complete all that apply):

Fuel*	Fired as...	Min. Heat Content (Btu/unit)	Max. % Ash	Max. % Sulfur	Max. Annual Fuel Use	Average Hourly Fuel Use	Maximum Hourly Fuel Use
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Wood	<input type="checkbox"/> Primary <input type="checkbox"/> Backup				tons	lbs	lbs
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Other Syngas	<input checked="" type="checkbox"/> Primary <input type="checkbox"/> Backup	Redacted Btu/cf			Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>	Redacted ft <sup>3</sup>

Please identify all combinations of fuels that are co-fired: Syngas and natural gas

Identify other fuel(s): Syngas produced by Kinsei Sangyo gasifier

**Coal-Fired Units**

9. Type of Coal Firing (check one):

- Pulverized-Wet Bottom     Hand-Fired     Chain Grate     Traveling Grate  
 Pulverized-Dry Bottom     Cyclones     Spreader Stoker     Fluidized Bed  
 Underfeed Stoker     Other (describe) \_\_\_\_\_

10. Flyash Reinjection:

- Yes     No

11. Overfire Air:

- Yes     No

**Oil-Fired Units**

12. Oil Preheater:

- Yes - Indicate Temperature \_\_\_\_\_ deg. F  
 No