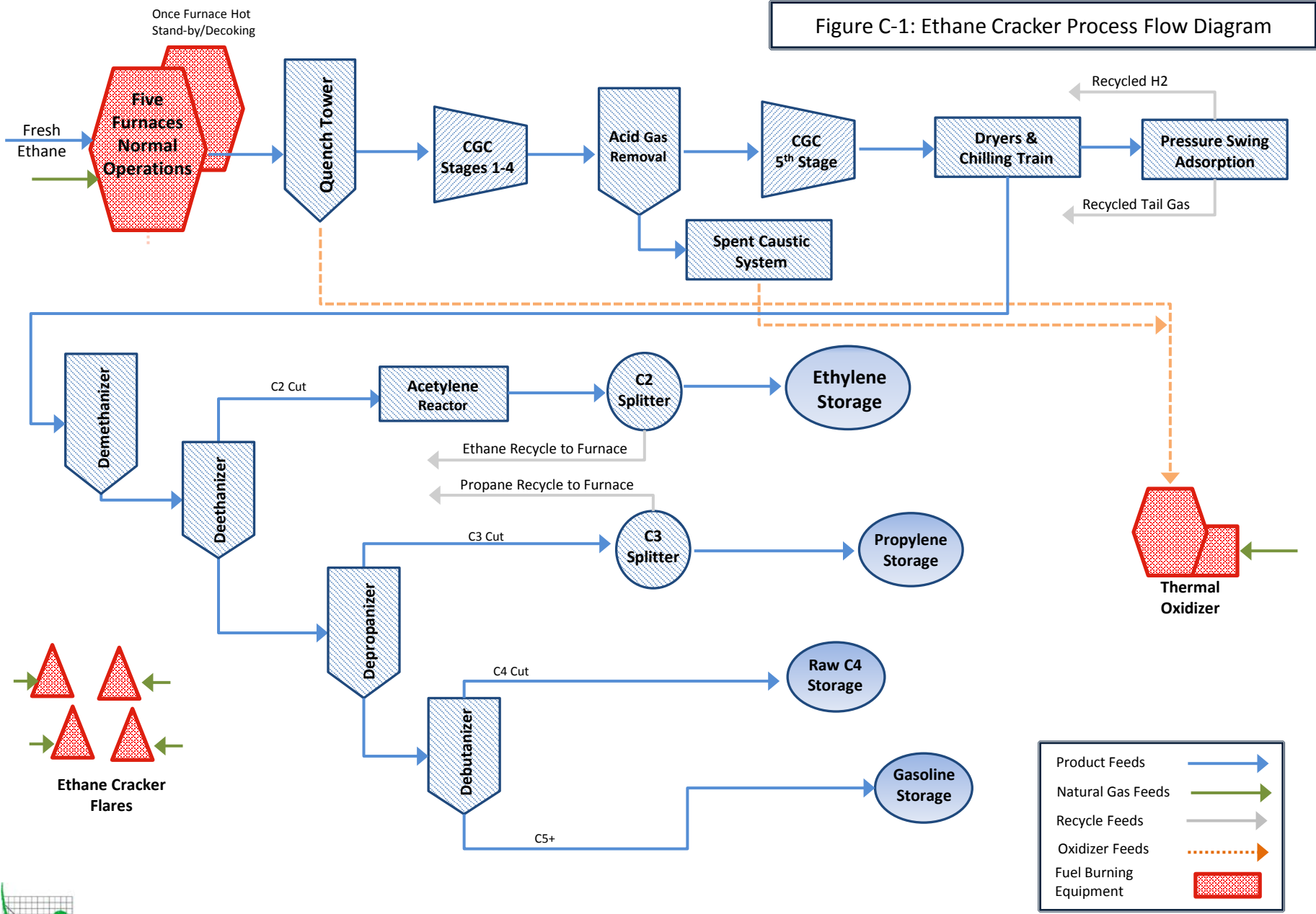


*Appendix C*  
*Process Flow Diagrams*

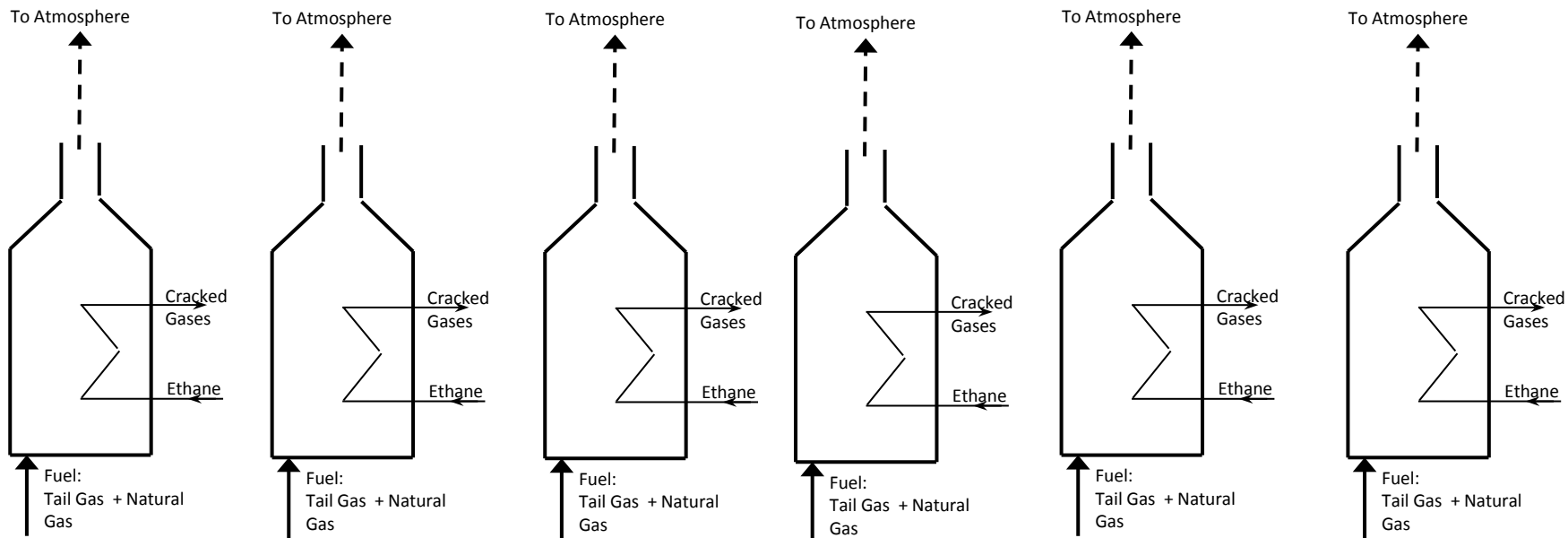


Figure C-1: Ethane Cracker Process Flow Diagram



Product Feeds	
Natural Gas Feeds	
Recycle Feeds	
Oxidizer Feeds	
Fuel Burning Equipment	





**Emission Unit:**  
**Pyrolysis**  
**Furnace #1 -**  
**EC-PF-101**

**Emission Unit:**  
**Pyrolysis**  
**Furnace #2 -**  
**EC-PF-102**

**Emission Unit:**  
**Pyrolysis**  
**Furnace #3 -**  
**EC-PF-103**

**Emission Unit:**  
**Pyrolysis**  
**Furnace #4 -**  
**EC-PF-104**

**Emission Unit:**  
**Pyrolysis**  
**Furnace #5 -**  
**EC-PF-105**

**Emission Unit:**  
**Pyrolysis**  
**Furnace #6 -**  
**EC-PF-106**

**Emission**  
**Control: Ultra**  
**Low NOx**  
**Burners**

**Emission**  
**Control: Ultra**  
**Low NOx**  
**Burners**

**Emission**  
**Control: Ultra**  
**Low NOx**  
**Burners**

**Emission**  
**Control: Ultra**  
**Low NOx**  
**Burners**

**Emission**  
**Control: Ultra**  
**Low NOx**  
**Burners**

**Emission**  
**Control: Ultra**  
**Low NOx**  
**Burners**

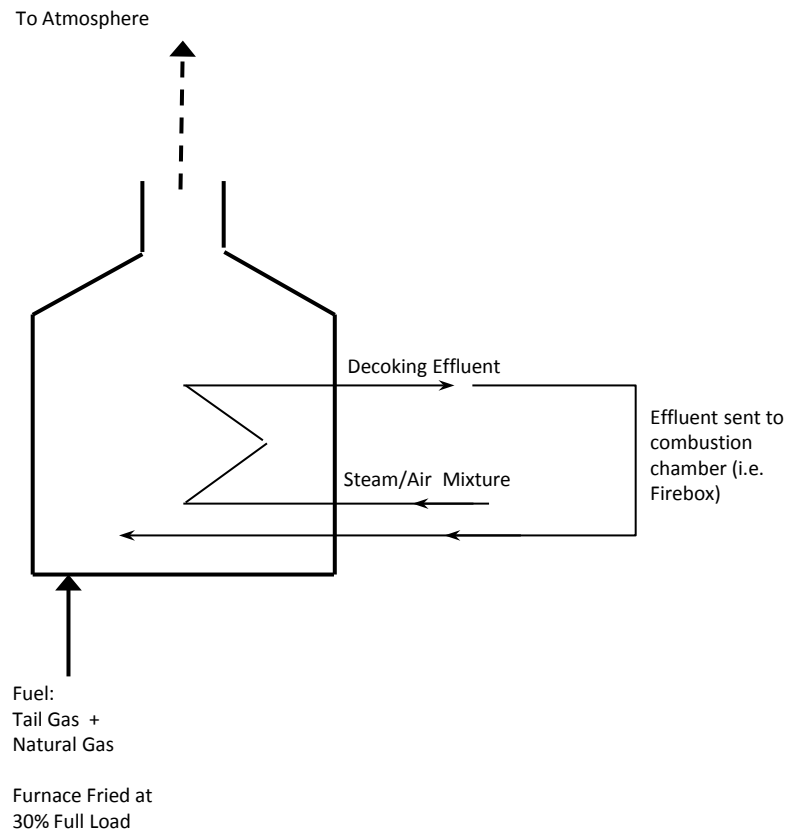
**Figure C-2: Ethane Cracker Emission Sources**

**Notes:**

1. The Ethane Crackers' fuel consists of a mixture of recycled tail gas (hydrogen rich) and natural gas (methane), with a heating value of 523 Btu/scf.
2. Normal operation assumes five furnaces continuous operation and one furnace on hot stand-by or decoking operations.







**Figure C-3: Decoking Operations**

**Notes:**

1. Max decoking firing time for all six furnaces is 864 hours per year @ 30% normal load (119 MMBtu/hr)
2. Decoking operations will occur a maximum of 12 events per year per furnace.





Figure C-4A: Polyethylene Plant A Process Flow Diagram

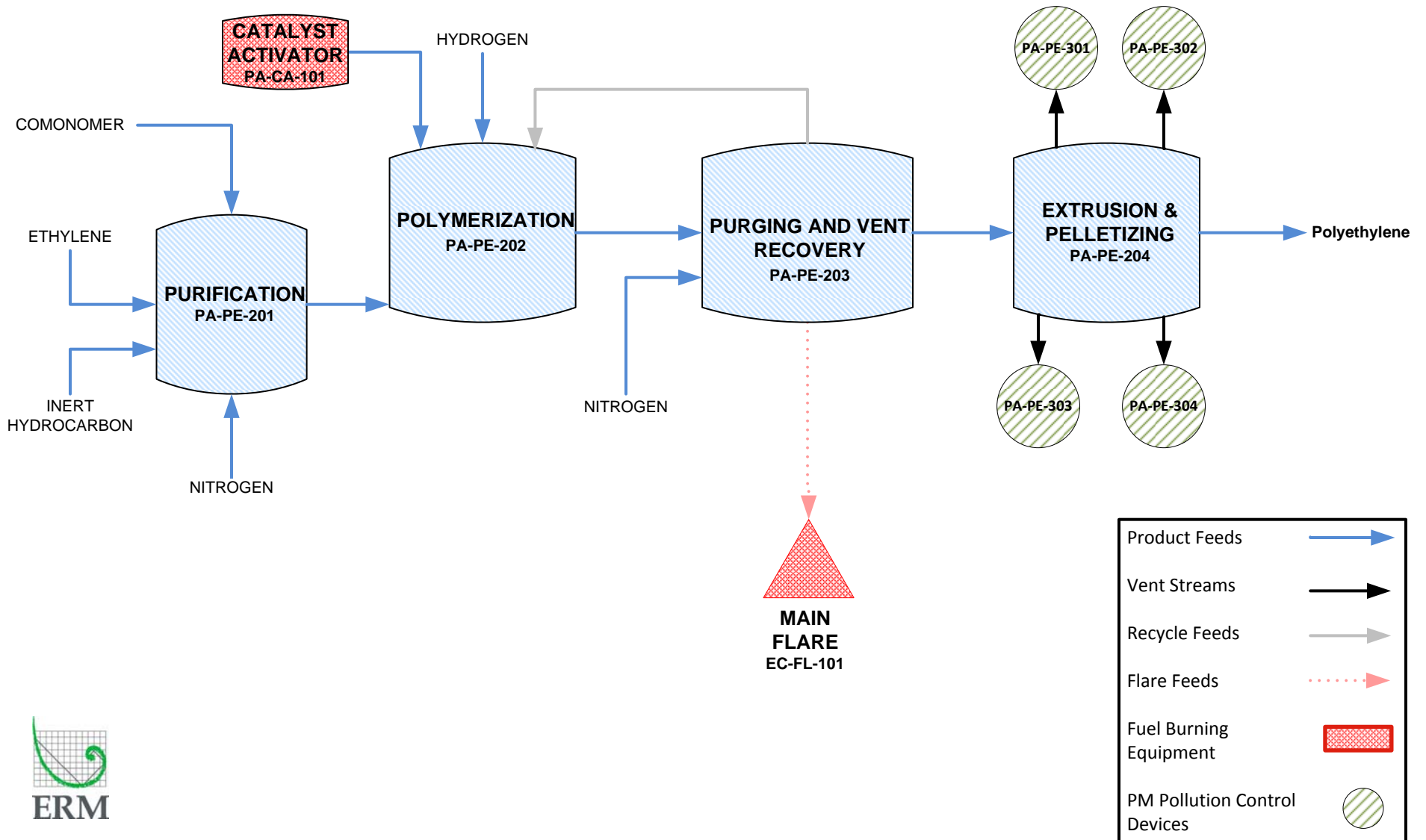




Figure C-4B: Polyethylene Plant B Process Flow Diagram

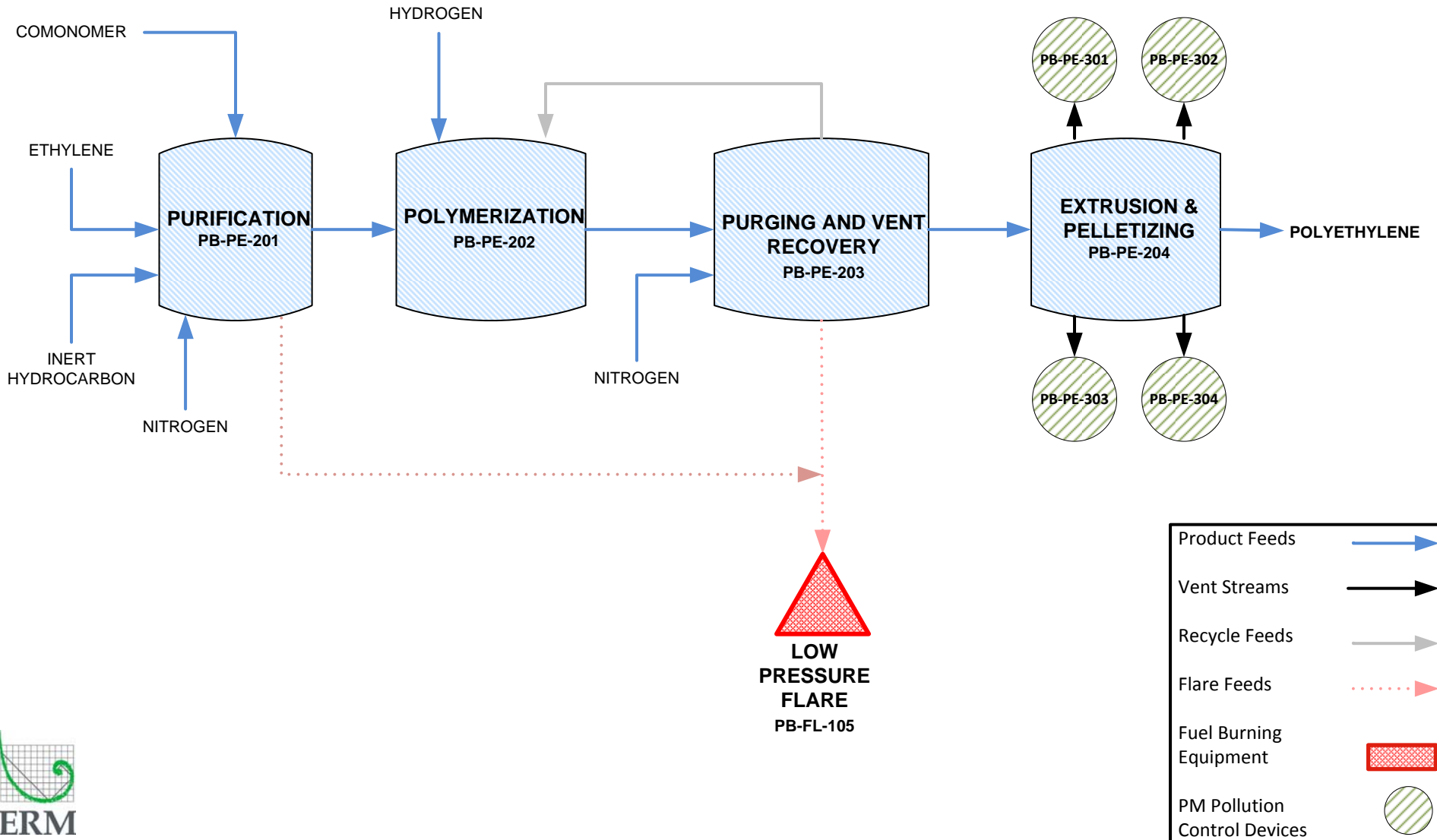
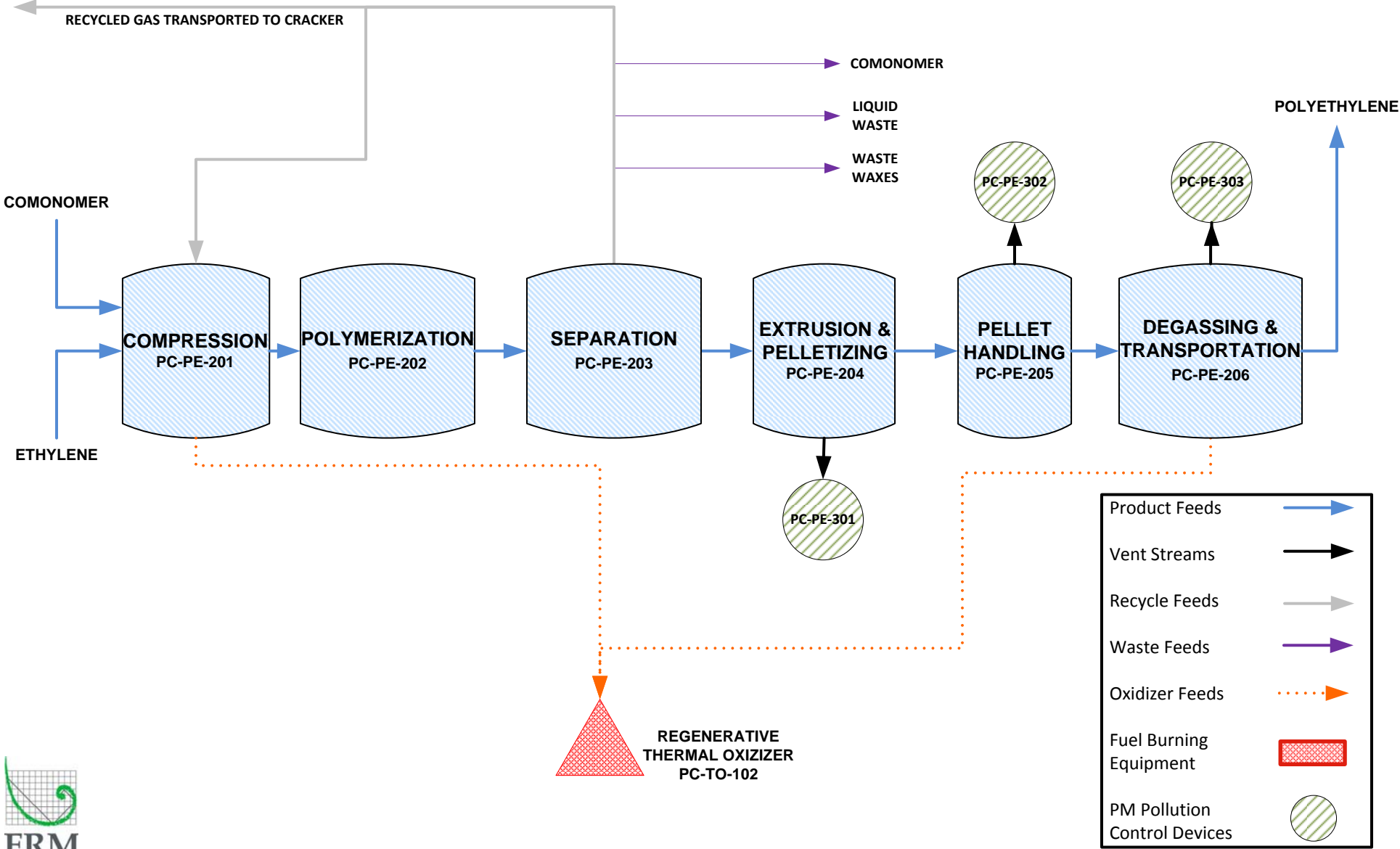
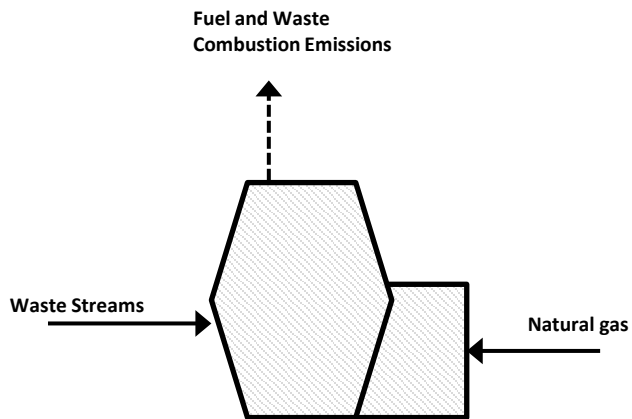




Figure C-4C: Polyethylene Plant C Process Flow Diagram



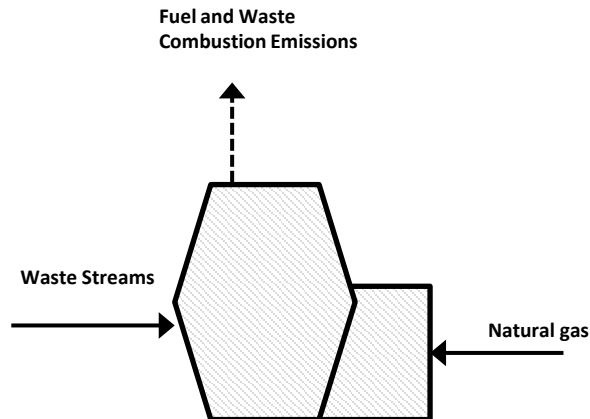




**Emission Unit:  
Cracker Process  
Oxidizer Emissions  
EC-CP-101**

**Emission Unit:  
Cracker Thermal  
Oxidizer  
EC-TO-101**

**Emission Controls:  
Low NOx Burners**



**Emission Unit: PE  
Process - Oxidizer  
Emissions  
PC-TO-103**

**Emission Unit:  
Regenerative Thermal  
Oxidizer  
PC-TO-102**

**Emission Controls: Low  
NOx Burners**

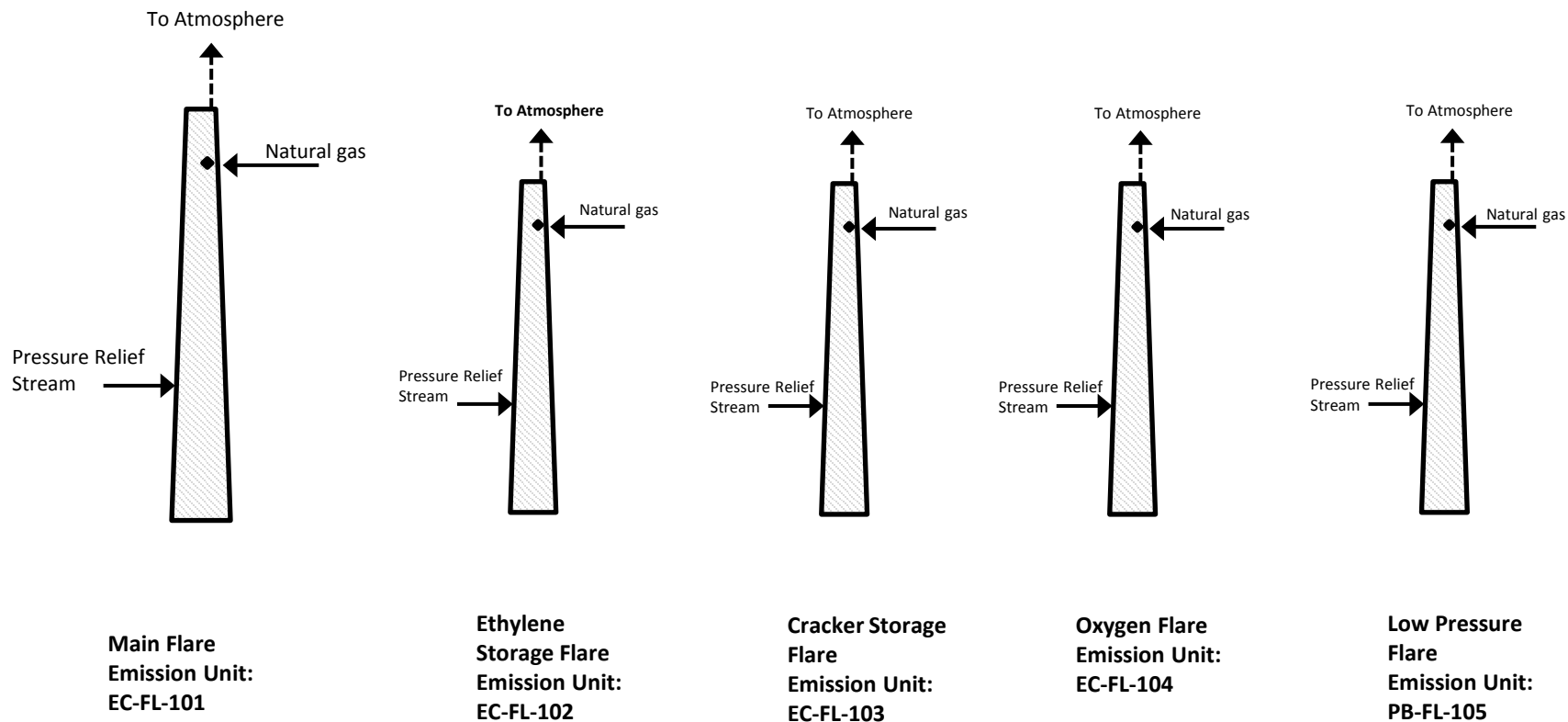
**Figure C-5: Cracker Thermal  
Oxidizer and RTO Emission Sources**

**Note:**

Each oxidizer has two emission sources associated with normal operation; (1) burner fuel combustion and (2) oxidization waste combustion







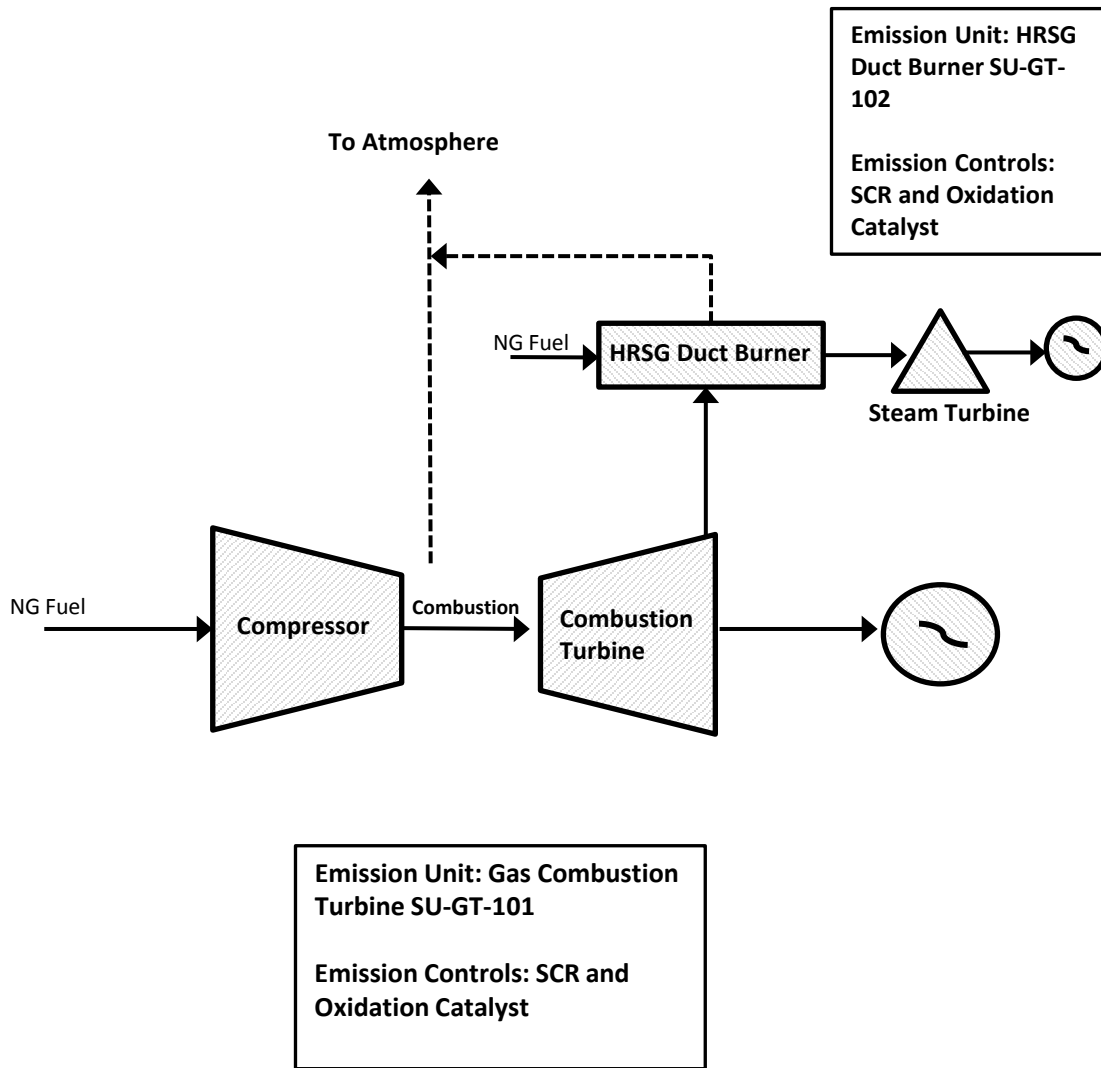
**Figure C-6: Flare Emission Sources**

**Notes:**

Potential emissions from flares include natural gas pilot combustion and non-emergency pressure relief events.



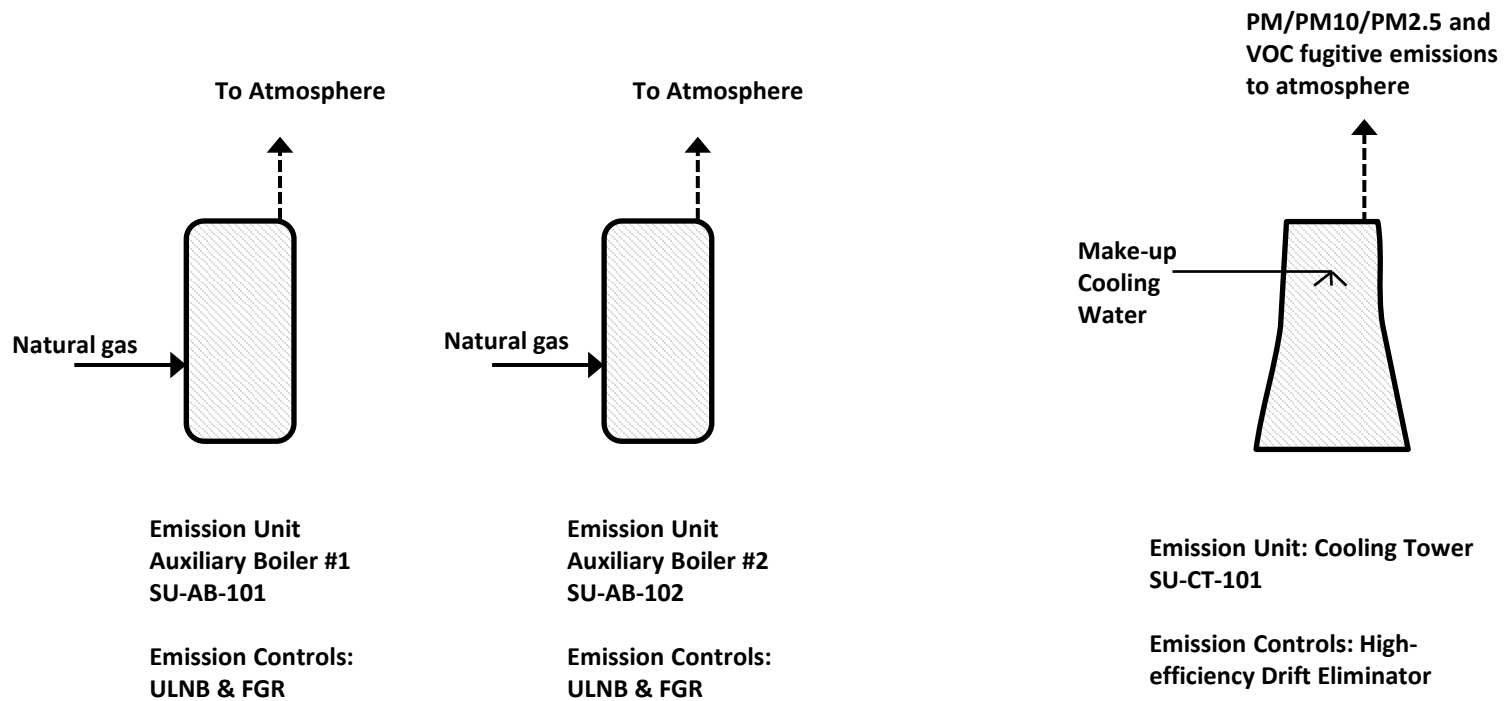




**Figure C-7: Cogeneration  
 Combustion Turbine and HRSG  
 Emission Sources**

**Notes:**  
 Combustion Turbine model number : GE 7EA





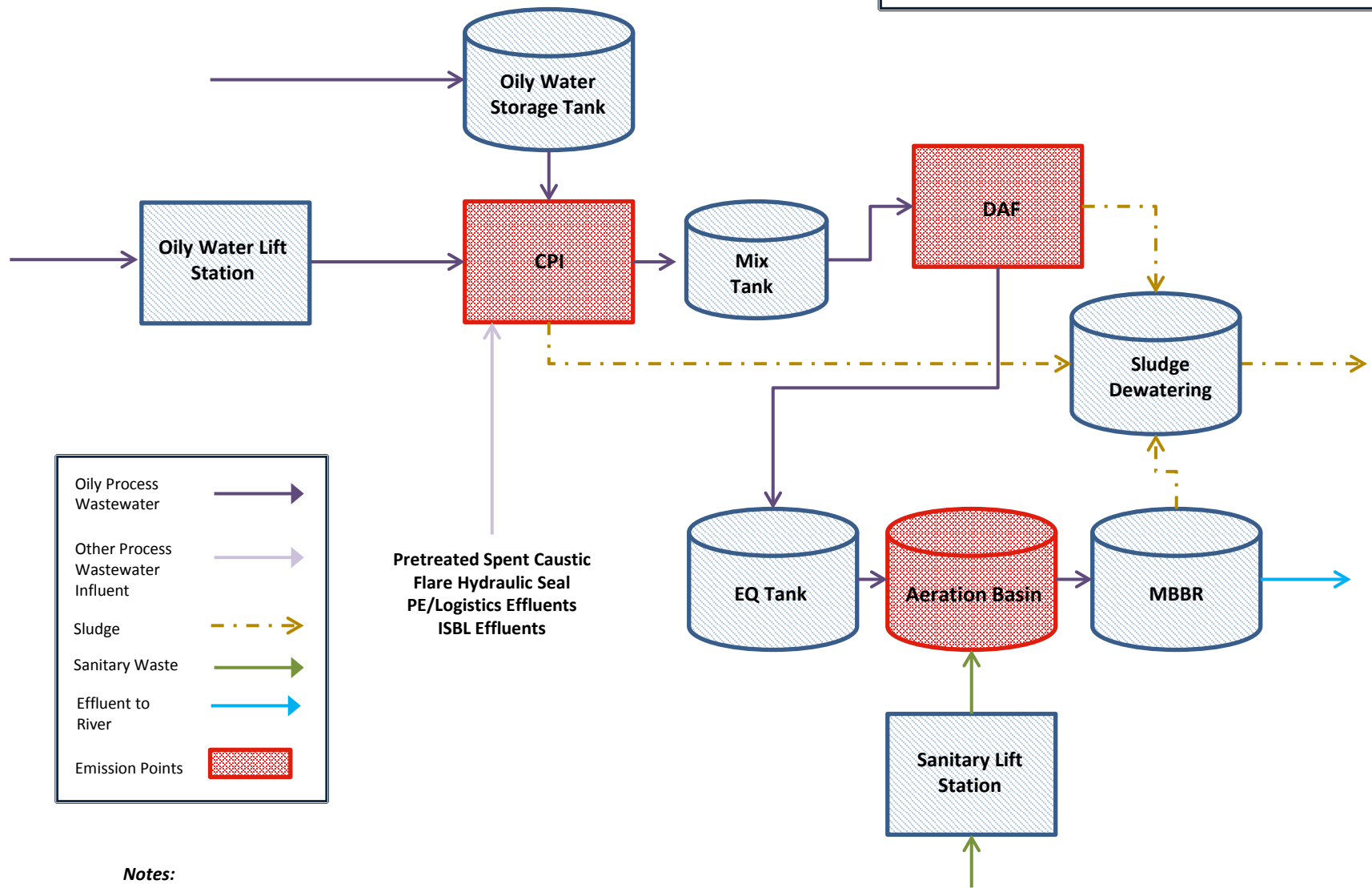
**Figure C-8: Auxiliary Boilers and Cooling Tower Emission Sources**

Notes:  
 ULNB – Ultra Low NOx Burners  
 FGR – Flue Gas Recirculation  
 PM – Particulate Matter





**Figure C-9: Wastewater Treatment Plant Process Flow Diagram**



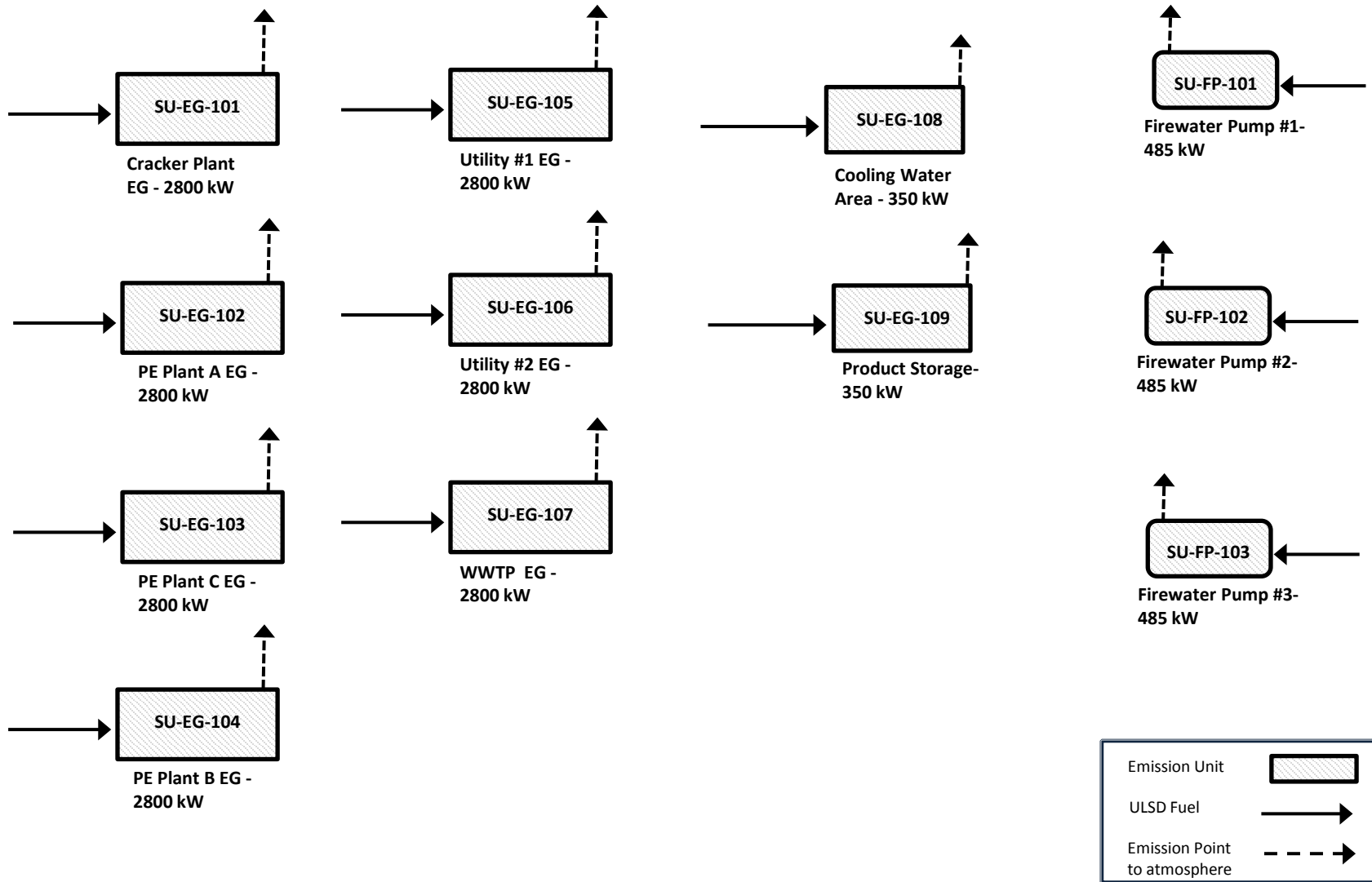
Oily Process Wastewater	
Other Process Wastewater Influent	
Sludge	
Sanitary Waste	
Effluent to River	
Emission Points	

**Notes:**

- CPI – Chemical-Physical Treatment Unit
- DAF – Dissolved Air Flotation Unit
- MBBR - Membrane Biological Reactor
- EQ Tank - Equalization Tank







**Figure C-10: Internal Combustion Engine Emission Sources**

**Notes:**  
 EG – Emergency Generator  
 FP – Firewater Pump  
 PE - Polyethylene  
 WWTP – Wastewater Treatment Plant

