GENERATOR REPLACEMENT REGULATION 13 PERMIT APPLICATION

Federal Correctional Institution
Plant ID No. 08100148

Prepared for:

Federal Correctional Institution
PO Box 1280
Beaver, West Virginia 25813

Prepared by:

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Project No. 0101-16-0328

August 2016

POTESTA

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Attachments not required for this application: H, K, M, Q, R, and S.

SECTION I-III

APPLICATION FOR NSR PERMIT

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☒ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☒ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office)*:
Federal Correctional Institution

2. Federal Employer ID No. *(FEIN)*:
530205705

3. Name of facility *(if different from above)*:
Same

4. The applicant is the:
☒ **OWNER** ☐ **OPERATOR** ☐ **BOTH**

5A. Applicant's mailing address:
PO Box 1280
Beaver, West Virginia 25813

5B. Facility's present physical address:
Federal Correctional Institution
1600 Industrial Park Drive
Beaver, West Virginia 25813

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**

➪ If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**

➪ If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation: NA

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

➪ If **YES,** please explain: Applicant owns the site.

➪ If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Federal Correctional Institution

10. North American Industry Classification System **(NAICS)** code for the facility:
922140

11A. DAQ Plant ID No. (for existing facilities only):
08100148

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-2170A

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- ➪ For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- ➪ For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

Traveling I-64 West from Charleston, take the Kenova-Ceredo exit for U.S. Route 52. Follow U.S. Route 52 South approximately 2 miles to the Route 1 intersection. The station is located on Route 1 near the intersection of Route 1 and U.S. Route 52.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
NA	Beaver	Raleigh
12.E. UTM Northing (KM): 4,185.47456	12F. UTM Easting (KM): 488.64599	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Replacement of 2 existing generators with 1 new generator.

14A. Provide the date of anticipated installation or change:	14B. Date of anticipated Start-Up if a permit is granted:
➪ If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: 05/2016	Facility is operating

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☒ **YES** ☐ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known)*. A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known)*. Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
➪ Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
➪ Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**
➪ For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☐ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Storage Tanks
☒ General Emission Unit, specify Emergency generator (General Permit Engine Form)

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below: NA

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ Wet Collecting System
☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal***

☐

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Governmental Agency
☐ Authority of Partnership
☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional Information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☐ **Responsible Official** / ☒ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____ *(Please use blue ink)* DATE: 9/1/10 *(Please use blue ink)*

35B. Printed name of signee: Billie Jones		35C. Title: Facility Manager
35D. E-mail: bj2jones@bop.gov	36E. Phone: (304) 252-9758 Ext 4400	36F. FAX: Use Email
36A. Printed name of contact person (if different from above): Same		36B. Title:
36C. E-mail:	36D. NA	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☐ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☐ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☐ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

BUSINESS CERTIFICATE

ATTACHMENT A

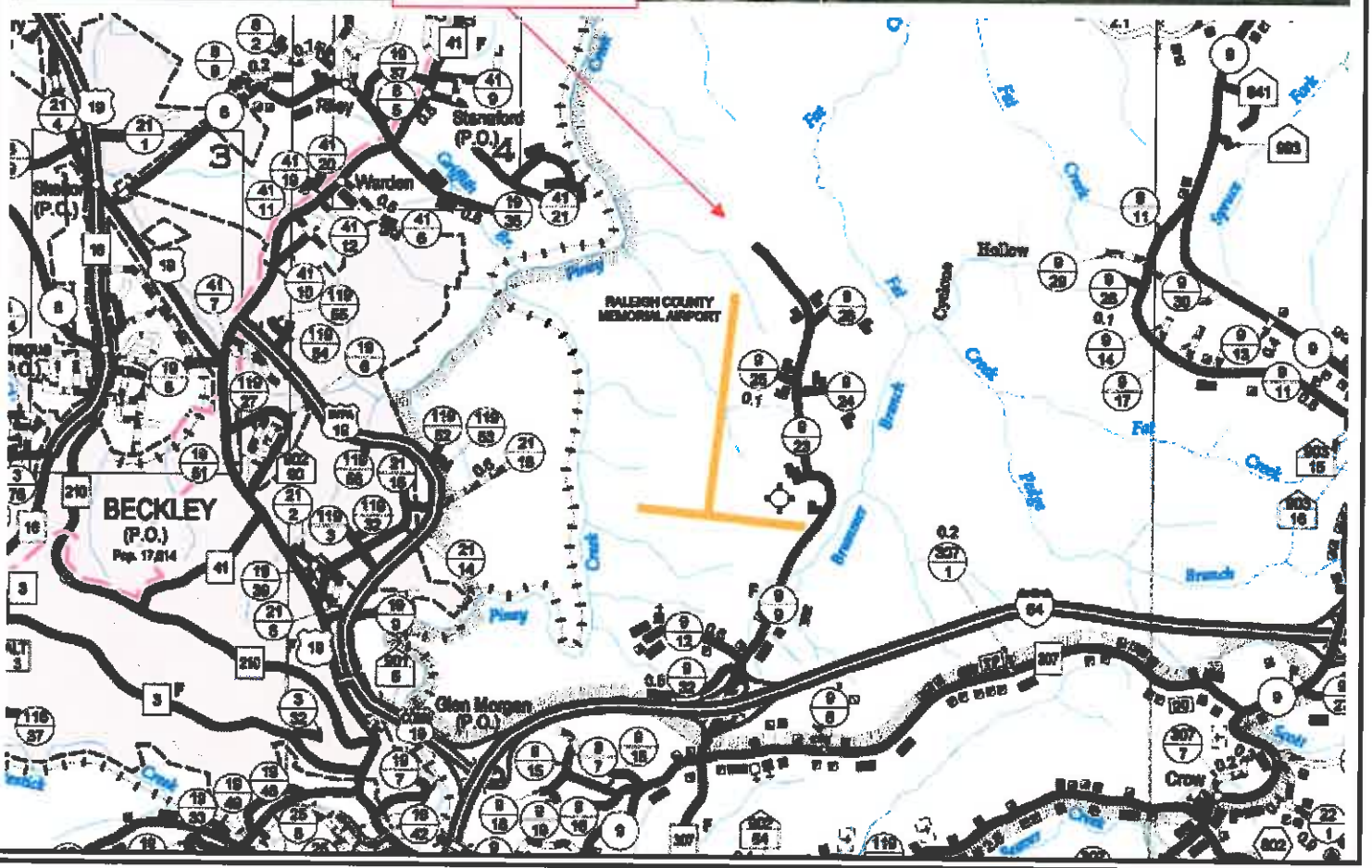
BUSINESS CERTIFICATE

Federal Correctional Institution is a government agency which does not require a business certificate.

ATTACHMENT B

SITE LOCATION MAP

Facility Location



POTESTA
Engineers and Environmental Consultants

7012 MacCorkle Avenue, S.E
Charleston, West Virginia 25304
Phone: (304) 342-1400
Fax: (304) 343-9031

Federal Correctional Institution
Beckley Facility
Raleigh County, West Virginia

ATTACHMENT C

INSTALLATION/STARTUP SCHEDULE

ATTACHMENT C

INSTALLATION AND START UP SCHEDULE

The two (2) existing emergency generators were removed in May 2016 and the new emergency generator was also installed in May 2016.

ATTACHMENT D

REGULATORY DISCUSSION

ATTACHMENT D

REGULATORY DISCUSSION

The facility is required to comply with the requirements contained in the applicable provisions of (1) 45CSR4, (2) 45CSR2&10, (3) 45CSR13, and (4) 40CFR60, Subpart Dc. The new generator is also required to comply with 40CFR60, Subpart IIII.

45CSR4 – To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors.

No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to objectionable odor at any location occupied by the public.

45CSR2 – To Prevent and Control Particulate Air Pollution From Combustion of Fuel In Indirect Heat Exchangers and 45CSR10 – To Prevent and Control Air Pollution From Emissions of Sulfur Oxides

These two rules establish emission limitations for smoke and particulate matter (Rule 2), and sulfur dioxide (Rule 10), which are discharged from fuel burning units. The boilers BLR1-3 and BLR4-6 rated at 12.0 MMBtu/hr and 2.0 MMBtu/hr, respectively, are fired with natural gas/oil.

The boilers are "Type b" fuel burning units. 45CSR§2-11.1 and 45CSR§10-10.1 exempt fuel burning units with a heat input under 10 MMBtu per hour from most of the applicable requirements of these two rules except for the visible emission standard of 45CSR§2-3.1.

45CSR13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

This rule requires the facility to obtain a permit or revise a permit and to operate within the limits of the permit and in accordance with the permit application.

40CFR60, Subpart Dc Standards of Performance for Small Industrial-Commercial- Institutional Steam Generating Units.

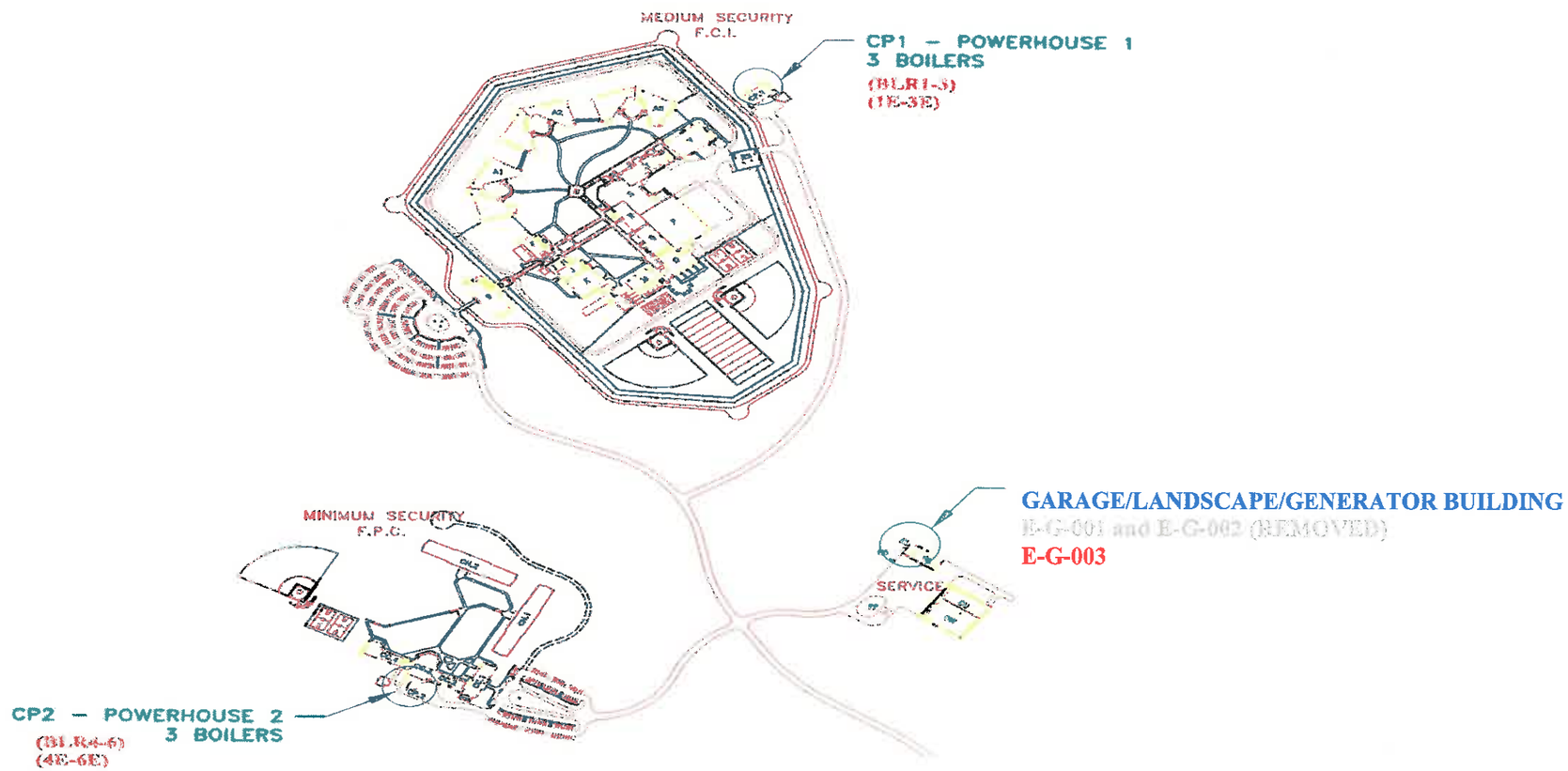
A heat generating unit with design heat input ranging between 10 MMBtu/hr and 100 MMBtu/hr is subject to sulfur dioxide (SO_2) or particulate matter emissions limits, fuel oil sulfur limits, performance testing and monitoring requirements. The operator of such a facility is also subject to reporting and recordkeeping as a way of demonstrating compliance.

40CFR60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

This Engine conforms to applicable requirements of this rule. A certificate of conformity has been granted to the manufacturer and is included in Appendix 1.

ATTACHMENT E

PLOT PLAN



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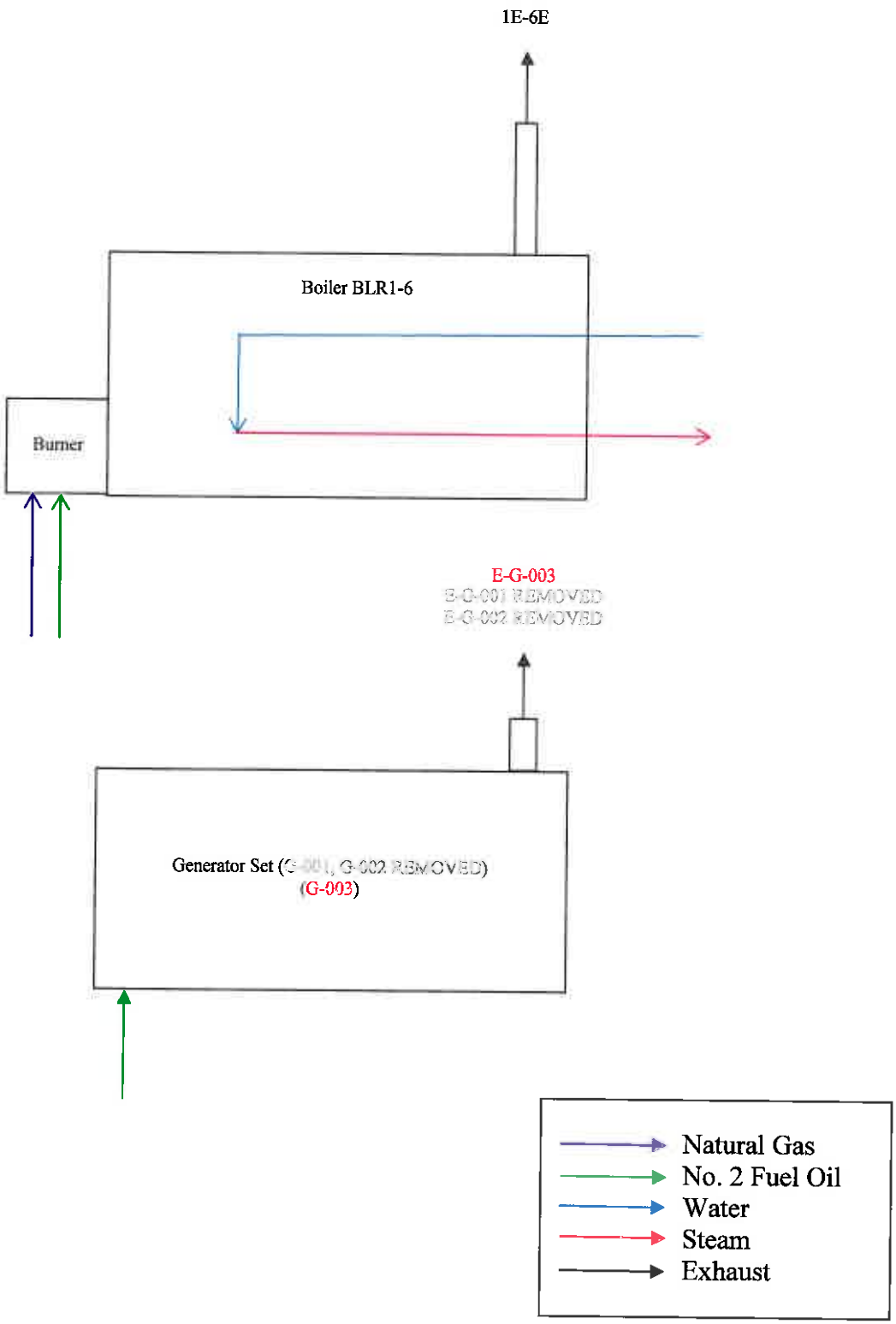
Project No. 0101-16-0328

ATTACHMENT F

PROCESS FLOW DIAGRAM



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Attachment F
Process Flow Diagram
Beckley Facility
Federal Correctional Institution

ATTACHMENT G

PROCESS DESCRIPTION

ATTACHMENT G

PROCESS DESCRIPTION

This permit application is for a new generator installed and operated at Federal Correctional Institution, Beckley Facility (FCI). The FCI has replaced the existing two (2) emergency generators with a new one.

ATTACHMENT I

EMISSION UNITS TABLE

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

New-Red; Removed-Grey; Existing-Black

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
BLR1	1E	Boiler	2013	12.0 MMBtu/hr	New	N
BLR2	2E	Boiler	2013	12.0 MMBtu/hr	New	N
BLR3	3E	Boiler	2013	12.0 MMBtu/hr	New	N
BLR4	4E	Boiler	2013	2.0 MMBtu/hr	New	N
BLR5	5E	Boiler	2013	2.0 MMBtu/hr	New	N
BLR6	6E	Boiler	2013	2.0 MMBtu/hr	New	N
G-001	E-G-001	Emergency Generator Set	1999	0.9 MMBtu/hr	Removed	N
G-002	E-G-002	Emergency Generator Set	1999	0.9 MMBtu/hr	Removed	N
G-003	**E-G-003**	**Emergency Generator Set**	**2016**	**2,990 hp**	**New**	**N**

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

EMISSION POINTS DATA SUMMARY SHEETS

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table-& Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m[4])
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
1E	Vert Stack	BLR1	Boiler	N	None	NA	NA	PM	0.36	0.46	0.36	0.46	Solid	AP-42	NA
								PM10	0.28	0.44	0.28	0.44	Solid	AP-42	
								PM2.5	0.22	0.43	0.22	0.43	Solid	AP-42	
								SO2	5.81	1.49	5.81	1.49	Vapor	AP-42	
								NOx	2.35	3.55	2.35	3.55	Vapor	Manuf	
								CO	1.43	4.58	1.43	4.58	Vapor	Manuf	
								VOC	0.10	0.32	0.10	0.32	Vapor	AP-42	
								HAP	0.0259	0.0985	0.0259	0.0985	Vapor/Solid	AP-42	
2E	Vert Stack	BLR2	Boiler	N	None	NA	NA	PM	0.36	0.46	0.36	0.46	Solid	AP-42	NA
								PM10	0.28	0.44	0.28	0.44	Solid	AP-42	
								PM2.5	0.22	0.43	0.22	0.43	Solid	AP-42	
								SO2	5.81	1.49	5.81	1.49	Vapor	AP-42	
								NOx	2.35	3.55	2.35	3.55	Vapor	Manuf	
								CO	1.43	4.58	1.43	4.58	Vapor	Manuf	
								VOC	0.10	0.32	0.10	0.32	Vapor	AP-42	
								HAP	0.0259	0.0985	0.0259	0.0985	Vapor/Solid	AP-42	
3E	Vert Stack	BLR3	Boiler	N	None	NA	NA	PM	0.36	0.46	0.36	0.46	Solid	AP-42	NA
								PM10	0.28	0.44	0.28	0.44	Solid	AP-42	
								PM2.5	0.22	0.43	0.22	0.43	Solid	AP-42	
								SO2	5.81	1.49	5.81	1.49	Vapor	AP-42	
								NOx	2.35	3.55	2.35	3.55	Vapor	Manuf	
								CO	1.43	4.58	1.43	4.58	Vapor	Manuf	
								VOC	0.10	0.32	0.10	0.32	Vapor	AP-42	
								HAP	0.0259	0.0985	0.0259	0.0985	Vapor/Solid	AP-42	

Attachment J Continued
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m[4])
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
4E	Vert Stack	BLR4	Boiler	N	None	NA	NA	PM	0.07	0.10	0.07	0.10	Solid	AP-42	NA
								PM10	0.05	0.09	0.05	0.09	Solid	AP-42	
								PM2.5	0.04	0.10	0.04	0.10	Solid	AP-42	
								SO2	0.96	0.25	0.96	0.25	Vapor	AP-42	
								NOx	0.39	0.59	0.39	0.59	Vapor	Manuf	
								CO	0.24	0.76	0.24	0.76	Vapor	Manuf	
								VOC	0.03	0.05	0.03	0.05	Vapor	AP-42	
								HAP	0.0048	0.0170	0.0048	0.0170	Vapor/Solid	AP-42	
5E	Vert Stack	BLR5	Boiler	N	None	NA	NA	PM	0.07	0.10	0.07	0.10	Solid	AP-42	NA
								PM10	0.05	0.09	0.05	0.09	Solid	AP-42	
								PM2.5	0.04	0.10	0.04	0.10	Solid	AP-42	
								SO2	0.96	0.25	0.96	0.25	Vapor	AP-42	
								NOx	0.39	0.59	0.39	0.59	Vapor	Manuf	
								CO	0.24	0.76	0.24	0.76	Vapor	Manuf	
								VOC	0.03	0.05	0.03	0.05	Vapor	AP-42	
								HAP	0.0048	0.0170	0.0048	0.0170	Vapor/Solid	AP-42	
6E	Vert Stack	BLR6	Boiler	N	None	NA	NA	PM	0.07	0.10	0.07	0.10	Solid	AP-42	NA
								PM10	0.05	0.09	0.05	0.09	Solid	AP-42	
								PM2.5	0.04	0.10	0.04	0.10	Solid	AP-42	
								SO2	0.96	0.25	0.96	0.25	Vapor	AP-42	
								NOx	0.39	0.59	0.39	0.59	Vapor	Manuf	
								CO	0.24	0.76	0.24	0.76	Vapor	Manuf	
								VOC	0.03	0.05	0.03	0.05	Vapor	AP-42	
								HAP	0.0048	0.0170	0.0048	0.0170	Vapor/Vapor	AP-42	

Attachment J Continued
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table-& Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
E-G-003	Vert Stack	003	Emergency Generator	N	None	NA	NA	PM	0.66	0.17	0.66	0.17	Solid	Manuf.	NA
								PM10	0.66	0.17	0.66	0.17	Solid	Manuf.	
								PM2.5	0.66	0.17	0.66	0.17	Solid	Manuf.	
								SO2	0.030	0.008	0.030	0.008	Vapor	AP-42	
								NOx	36.26	9.07	36.26	9.07	Vapor	Manuf.	
								CO	1.98	0.50	1.98	0.50	Vapor	Manuf.	
								VOC	0.66	0.17	0.66	0.17	Vapor	Manuf.	
								HAPS	0.0297	0.0076	0.0297	0.0076	Vapor/Solid	AP-42	
E-G-001 and E-G-002 Removed															

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

1 Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

2 Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

3 List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, etc. **DO NOT LIST** CO_2, H_2, H_2O, N_2, O_2, and Noble Gases.

4 Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

5 Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

6 Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

7 Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J Continued
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
E1	2.0	NA	2,390	NA	NA	NA	4,185.47456	488.64599
E2	2.0	NA	2,390	NA	NA	NA	4,185.47456	488.64599
E3	2.0	NA	2,390	NA	NA	NA	4,185.47456	488.64599
E4	0.83	NA	398	NA	NA	NA	4,185.47456	488.64599
E5	0.83	NA	398	NA	NA	NA	4,185.47456	488.64599
E6	0.83	NA	398	NA	NA	NA	4,185.47456	488.64599
E-G-001	0.83	NA	NA	NA	NA	NA	4,185.47456	488.64599
E-G-002	NA	NA	NA	NA	NA	NA	4,185.47456	488.64599
E-G-003	NA	NA	NA	NA	NA	NA	4,185.47456	488.64599

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

ATTACHMENT L

EMISSIONS UNIT DATA SHEETS

Attachment L
Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form): Emission Point I.D 1E-3E; Source: BLR1-3

Equipment Information

1. Manufacturer: Cleaver-Brooks	2. Model FLX-12000 Serial No. NA
3. Number of units: 3	4. Use Heating System Boiler
5. Rated Boiler Horsepower: 287 hp	6. Boiler Serial No.: NA
7. Date constructed: 2013	8. Date of last modification and explain: NA
9. Maximum design heat input per unit: 12.0 $\times 10^6$ BTU/hr	10. Peak heat input per unit: 12.0 $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: NA LB/hr 15 psig	12. Projected Operating Schedule: Hours/Day 24 Days/Week 7 Weeks/Year 52
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☒ Natural Gas Burner ☐ Others, specify	14. Proposed type of burners and orientation: ☐ Vertical ☒ Front Wall ☐ Opposed ☐ Tangential ☐ Others, specify
15. Type of draft: ☒ Forced ☐ Induced	16. Percent of ash retained in furnace: NA %
17. Will flyash be reinjected? ☐ Yes ☒ No	18. Percent of carbon in flyash: NA %

Stack or Vent Data

19. Inside diameter or dimensions: 2.0 ft.	20. Gas exit temperature: NA °F
21. Height: NA ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: 2,390 ft^3/min	
24. Estimated percent of moisture: NA %	

Fuel Requirements

25. Type	Fuel Oil No.	Natural Gas	Gas (other, specify)	Coal, Type:	Other:
Quantity (at Design Output)	81.7 gph@60°F	12,000 ft^3/hr	NA ft^3/hr	NA TPH	NA
Annually	40.85 $\times 10^3$ gal	99.12 $\times 10^6$ ft^3/hr	$\times 10^6$ ft^3/hr	tons	
Sulfur	Maximum: 0.5 wt. % Average: NA wt. %	Pipeline quality natural gas gr/100 ft^3	gr/100 ft^3	Maximum: wt. %	
Ash (%)	NA	NA		Maximum	
BTU Content	140,000 BTU/Gal. NA Lbs/Gal.@60°F	1,000 BTU/ft^3	BTU/ft^3	BTU/lb	
Source	NA	Pipeline			
Supplier	NA	Pipeline			
Halogens (Yes/No)	No	No			
List and identify Metals	See Attachment N	See Attachment N			

26. Gas burner mode of control:
☐ Manual ☐ Automatic hi-low
☒ Automatic full modulation ☐ Automatic on-off

27. Gas burner manufacture: Cleaver Brooks

28. Oil burner manufacture: Same

29. If fuel oil is used, how is it atomized? NA
☐ Oil Pressure ☐ Steam Pressure
☐ Compressed Air ☐ Rotary Cup
☐ Other, specify

30. Fuel oil preheated: ☐ Yes ☐ No NA

31. If yes, indicate temperature: NA °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:
NA @ °F, PSIA, % moisture

33. Emission rate at rated capacity: See No. 37 of this form lb/hr

34. Percent excess air actually required for combustion of the fuel described: NA %

Coal Characteristics

35. Seams: NA

36. Proximate analysis (dry basis): % of Fixed Carbon: NA
% of Moisture:
% of Ash:
% of Sulfur:
% of Volatile Matter:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

	Pounds per Hour lb/hr (1)	grain/ACF	@ °F	PSIA
CO	1.43	NA	NA	NA
Hydrocarbons	NA	NA	NA	NA
NO_x	2.35	NA	NA	NA
Pb	0.0002	NA	NA	NA
PM_{10}	0.28	NA	NA	NA
SO_2	5.82	NA	NA	NA
VOCs	0.10	NA	NA	NA
Other (specify)		NA	NA	NA
Total HAPs	0.0259	NA	NA	NA

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr(1)	grain/ACF	@ °F	PSIA
CO	1.43	NA	NA	NA
Hydrocarbons	NA	NA	NA	NA
NO_x	2.35	NA	NA	NA
Pb	0.0002	NA	NA	NA
PM_{10}	0.28	NA	NA	NA
SO_2	5.82	NA	NA	NA
VOCs	0.10	NA	NA	NA
Other (specify)		NA	NA	NA
Total HAPs	0.0259	NA	NA	NA

39. How will waste material from the process and control equipment be disposed of?
NA

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit. NA

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet? Yes

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

No changes to existing permit are proposed.

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.

None Proposed.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

As required by 40CFR60, Subpart Dc.

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.

None Proposed.

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

Note:
1. Quantities of pollutants emitted from each unit of a set of boilers.

Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER

Control Device ID No. (must match List Form): Emission Point I.D 4E-6E; Source: BLR4-6

Equipment Information

1. Manufacturer: Cleaver-Brooks	2. Model FLX-200 Serial No. NA
3. Number of units: 3	4. Use Heating System Boiler
5. Rated Boiler Horsepower: 48 hp	6. Boiler Serial No.: NA
7. Date constructed: 2013	8. Date of last modification and explain: NA
9. Maximum design heat input per unit: 2.0 $\times 10^6$ BTU/hr	10. Peak heat input per unit: 2.0 $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: NA LB/hr 15 psig	12. Projected Operating Schedule: Hours/Day 24 Days/Week 7 Weeks/Year 52
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☒ Natural Gas Burner ☐ Others, specify	14. Proposed type of burners and orientation: ☐ Vertical ☒ Front Wall ☐ Opposed ☐ Tangential ☐ Others, specify
15. Type of draft: ☒ Forced ☐ Induced	16. Percent of ash retained in furnace: NA %
17. Will flyash be reinjected? ☐ Yes ☒ No	18. Percent of carbon in flyash: NA %

Stack or Vent Data

19. Inside diameter or dimensions: 0.83 ft.	20. Gas exit temperature: NA °F
21. Height: NA ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: 398 ft^3/min	
24. Estimated percent of moisture: NA %	

Fuel Requirements

25. Type	Fuel Oil No.	Natural Gas	Gas (other, specify)	Coal, Type:	Other:
Quantity (at Design Output)	NA gph@60°F	2,000 ft^3/hr	NA ft^3/hr	NA TPH	NA
Annually	13.5 $\times 10^3$ gal	16.52 $\times 10^6$ ft^3/hr	$\times 10^6$ ft^3/hr	tons	
Sulfur	Maximum: 0.5 wt. % Average: NA wt. %	Pipeline quality natural gas gr/100 ft^3	gr/100 ft^3	Maximum: wt. %	
Ash (%)	NA	NA		Maximum	
BTU Content	140,000 BTU/Gal. NA Lbs/Gal.@60°F	1,000 BTU/ft^3	BTU/ft^3	BTU/lb	
Source	NA	Pipeline			
Supplier	NA	Pipeline			
Halogens (Yes/No)	No	No			
List and Identify Metals	See Attachment N	See Attachment N			

26. Gas burner mode of control:
- ☐ Manual
- ☐ Automatic hi-low
- ☒ Automatic full modulation
- ☐ Automatic on-off

27. Gas burner manufacture: Cleaver Brooks

28. Oil burner manufacture: Cleaver Brooks

29. If fuel oil is used, how is it atomized? ☐ Oil Pressure ☐ Steam Pressure ☐ Compressed Air ☐ Rotary Cup ☐ Other, specify NA

30. Fuel oil preheated: ☐ Yes ☐ No NA

31. If yes, indicate temperature: NA °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:

NA @ °F, PSIA, % moisture

33. Emission rate at rated capacity: See No. 37 of this form lb/hr

34. Percent excess air actually required for combustion of the fuel described: NA %

Coal Characteristics

35. Seams: NA

36. Proximate analysis (dry basis): % of Fixed Carbon: NA % of Sulfur: % of Moisture: % of Volatile Matter: % of Ash:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr (1)	grain/ACF	@ °F	PSIA
CO	0.24	NA	NA	NA
Hydrocarbons	NA	NA	NA	NA
NO_x	0.39	NA	NA	NA
Pb	0.0001	NA	NA	NA
PM_{10}	0.05	NA	NA	NA
SO_2	0.96	NA	NA	NA
VOCs	0.03	NA	NA	NA
Other (specify)		NA	NA	NA
Total HAPs	0.0048	NA	NA	NA

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr(1)	grain/ACF	@ °F	PSIA
CO	0.24	NA	NA	NA
Hydrocarbons	NA	NA	NA	NA
NO_x	0.39	NA	NA	NA
Pb	0.0001	NA	NA	NA
PM_{10}	0.05	NA	NA	NA
SO_2	0.96	NA	NA	NA
VOCs	0.03	NA	NA	NA
Other (specify)		NA	NA	NA
Total HAPs	0.048	NA	NA	NA

39. How will waste material from the process and control equipment be disposed of?
NA

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit. NA

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet? Yes

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

No changes to existing permit are proposed.

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.

None Proposed.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.
As required by 40CFR60, Subpart Dc.

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.

None Proposed.

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

Note:
1. Quantities of pollutants emitted from each unit of a set of boilers.

EMERGENCY GENERATOR ENGINE DATA SHEET

Source Identification Number[1]		G-003	
Engine Manufacturer and Model		Cat 3516C	
Manufacturer's Rated bhp/rpm		2990 bhp/1800 rpm	
Source Status[2]		NS	
Date Installed/Modified/Removed[3]		5/2016	
Engine Manufactured/Reconstruction Date[4]		12/9/2015	
Is this a Certified Stationary Compression Ignition Engine according to 40CFR60 Subpart IIII? (Yes or No)[5]		Yes	
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No)[6]		No	
Engine, Fuel and Combustion Data	Engine Type[7]	LB4S	
	APCD Type[8]	NA	
	Fuel Type[9]	2FO	
	H_2S (gr/100 scf)	Unknown	
	Operating bhp/rpm	2990/1800	
	BSFC (Btu/bhp-hr)	6,462	
	Fuel throughput (gal/hr)	141.5	
	Fuel throughput (gal/yr)	70,750 gal/yr @500 hours	
	Operation (hrs/yr)	500	
Reference[10]	Potential Emissions[11]	lbs/hr	tons/yr
	NO_X	36.26	9.07
	CO	1.98	0.5
	VOC	0.66	0.17
	SO_2	0,030	0,008
	PM_{10}	0.66	0.17
	Formaldehyde	0.0015	0.0004
	Total HAPs	0.0297	0.0076

1. Enter the appropriate Source Identification Number for each emergency generator. Generator engines should be designated EG-1.

2. Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Removal of Source

3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.

4. Enter the date that the engine was manufactured, modified or reconstructed.

5. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart IIII. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4210 as appropriate.

   Provide a manufacturer's data sheet for all engines being registered.

6. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

   Provide a manufacturer's data sheet for all engines being registered.

7. Enter the Engine Type designation(s) using the following codes:

LB2S	Lean Burn Two Stroke	RB4S	Rich Burn Four Stroke
LB4S	Lean Burn Four Stroke		

8. Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	SCR	Lean Burn & Selective Catalytic Reduction

9. Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas
2FO	#2 Fuel Oil	LPG	Liquid Propane Gas

10. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other _____	(please list)

11. Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

ATTACHMENT N

SUPPORTING EMISSION CALCULATIONS

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

Facility Emissions

Proposed PTE

Emission	PM		PM10		PM2.5		NOx		CO		SO_2		VOC	
Source	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BLR1	0.36	0.46	0.28	0.44	0.22	0.43	2.35	3.55	1.43	4.58	5.81	1.49	0.10	0.32
BLR2	0.36	0.46	0.28	0.44	0.22	0.43	2.35	3.55	1.43	4.58	5.81	1.49	0.10	0.32
BLR3	0.36	0.46	0.28	0.44	0.22	0.43	2.35	3.55	1.43	4.58	5.81	1.49	0.10	0.32
BLR4	0.07	0.10	0.05	0.09	0.04	0.0954	0.39	0.59	0.24	0.76	0.96	0.25	0.03	0.05
BLR5	0.07	0.10	0.05	0.09	0.04	0.0954	0.39	0.59	0.24	0.76	0.96	0.25	0.03	0.05
BLR6	0.07	0.10	0.05	0.09	0.04	0.0954	0.39	0.59	0.24	0.76	0.96	0.25	0.03	0.05
G-001	0.48	0.12	0.37	0.11	0.19	0.11	24.14	6.04	5.32	1.30	4.07	1.02	0.73	0.18
G-002	0.48	0.12	0.37	0.11	0.19	0.11	24.14	6.04	5.32	1.30	4.07	1.02	0.73	0.18
G-003	0.66	0.17	0.66	0.17	0.66	0.17	36.26	9.07	1.98	0.50	0.030	0.01	0.66	0.17
Total	1.95	1.86	1.66	1.77	1.45	1.75	44.47	21.49	7.00	16.52	20.34	5.23	1.05	1.28

Existing PTE

Emission	PM		PM10		PM2.5		NOx		CO		SO_2		VOC	
Source	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BLR1	0.36	0.46	0.28	0.44	0.22	0.43	2.35	3.55	1.43	4.58	5.81	1.49	0.10	0.32
BLR2	0.36	0.46	0.28	0.44	0.22	0.43	2.35	3.55	1.43	4.58	5.81	1.49	0.10	0.32
BLR3	0.36	0.46	0.28	0.44	0.22	0.43	2.35	3.55	1.43	4.58	5.81	1.49	0.10	0.32
BLR4	0.07	0.10	0.05	0.09	0.04	0.0954	0.39	0.59	0.24	0.76	0.96	0.25	0.03	0.05
BLR5	0.07	0.10	0.05	0.09	0.04	0.0954	0.39	0.59	0.24	0.76	0.96	0.25	0.03	0.05
BLR6	0.07	0.10	0.05	0.09	0.04	0.0954	0.39	0.59	0.24	0.76	0.96	0.25	0.03	0.05
G-001	0.48	0.12	0.37	0.11	0.19	0.111428571	24.14	6.04	5.32	1.3	4.07	1.02	0.73	0.18
G-002	0.48	0.12	0.37	0.11	0.19	0.111428571	24.14	6.04	5.32	1.3	4.07	1.02	0.73	0.18
Total	2.25	1.93	1.74	1.83	1.17	1.80	56.485	24.50	15.66	18.62	28.45	7.26	1.85	1.47

Change in Potential Emissions

Emission	Emissions	
Type	lbs/hr	tons/yr
PM	-0.30	-0.07
PM10	-0.08	-0.06
PM2.5	0.28	-0.05
SO_2	-8.11	-2.03
NOx	-12.02	-3.01
CO	-8.66	-2.10
VOC	-0.80	-0.19

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

Existing Hazardous Air Pollutants [1]

HAP	lbs/hr	tons/yr
Benzene	0.0007	0.001
Formaldehyde	0.0120	0.0157
Hexane	0.0741	0.3246
Ethylbenzene	0.0006	0.0006
Naphthalene	0.0006	0.0007
Toluene	0.0022	0.0015
Lead	0.0009	0.0006
Xylene	0.0006	0.0006
Remainder HAPS	0.0003	0.0012
Total HAPS	0.0920	0.3465

New Generator Harzardous Air Pollutants

HAP	lbs/hr	tons/yr
Benzene	0.0154	0.0039
Formaldehyde	0.0016	0.0004
Hexane	0	0
Ethylbenzene	0	0
Naphthalene	0.0026	0.0007
Toluene	0.0056	0.0014
Lead	0	0
Xylene	0.0038	0.001
Acetaldehyde	0.0005	0.0001
Acrolein	0.0002	0.0001

Proposed Hazardous Air Pollutants

HAP	lbs/hr	tons/yr
Benzene	0.0161	0.0049
Formaldehyde	0.0136	0.0161
Hexane	0.0741	0.3246
Ethylbenzene	0.0006	0.0006
Naphthalene	0.0032	0.0014
Toluene	0.0078	0.0029
Lead	0.0009	0.0006
Xylene	0.0044	0.0016
Acetaldehyde	0.0005	0.0001
Acrolein	0.0002	0.0001
Remainder HAPS	0.0003	0.0012
Total HAPS	0.1217	0.3541

Notes:

1. Existing HAPS taken from Permit R23-2170A

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

Natural Gas Combustion Emissions Boilers BLR1-3

Fuel Use =	12,000	scf/hr	Estimated
Heat Content of Fuel =	1,000	Btu/scf	Standard
Maximum Burner Rating =	12,000,000	Btu/hr	Provided
Hours of Operation =	8,760	hrs/year	
Fuel Usage =	0.0120	10^6 scf per hour	
	105.12	10^6 scf/year	

Criteria and HAP Emissions

Emission Type	EF[4] lb/10^6 scf	Emissions One Unit lb/hr	One Unit tons/year	Three Units lb/hr	Three Units tons/year	EF Reference
PM	7.6	0.09	0.39	0.27	1.17	Table 1.4-2
PM10[1]	7.6	0.09	0.39	0.27	1.17	See Note 1
PM2.5[1]	7.6	0.09	0.39	0.27	1.17	See Note 1
SO_2	0.6	0.01	0.04	0.03	0.12	Table 1.4-2
NOx	See below	0.72	3.14	2.15	9.42	Manufact
CO	See below	1.02	4.48	3.07	13.44	Manufact
VOC	5.5	0.07	0.31	0.21	0.93	Table 1.4-2

Rounding to = 2

Manufacturer Criteria Emissions for Natural Gas

Emission Type	Flue Gas Flow Rate lbs/hr	Emissions PPM	Emissions lbs/hr
CO	10,225	100	1.02
NOx	10,225	70	0.72

Notes:

1 - It is assumed that PM10 and PM2.5 are equal to TSP (PM).

Natural Gas Combustion HAPS Boilers BLR1-3

	One Unit	Three Units	
Total Heaters Rating =	12	36	MMBtu/hr
Operating Hours =	8,760	8,760	hrs/yr

CAS No.	Hazardous Air Pollutants	EF[1]		One Unit		Three Units	
		lb/10^6 scf	lb/MMBtu	lb/hr	tons/year	lb/hr	tons/year
91-57-6	2-Methylnaphthalene	2.40E-05	2.35E-08	2.82E-07	1.24E-06	8.47E-07	3.71E-06
56-49-5	3-Methylchloranthrene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
57-97-6	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	1.88E-07	8.24E-07	5.65E-07	2.47E-06
83-32-9	Acenaphthene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
203-96-8	Acenaphthylene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
120-12-7	Anthracene	2.40E-06	2.35E-09	2.82E-08	1.24E-07	8.47E-08	3.71E-07
56-55-3	Benz(a)anthracene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
71-43-2	Benzene	2.10E-03	2.06E-06	2.47E-05	1.0821E-04	7.41E-05	3.25E-04
50-32-8	Benzo(a)pyrene	1.20E-06	1.18E-09	1.41E-08	6.18E-08	4.24E-08	1.86E-07
205-99-2	Benzo(b)fluoranthene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
191-24-2	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	1.41E-08	6.18E-08	4.24E-08	1.86E-07
205-82-3	Benzo(k)fluoranthene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
218-01-9	Chrysene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
53-70-3	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	1.41E-08	6.18E-08	4.24E-08	1.86E-07
25321-22-6	Dichlorobenzene	1.20E-03	1.18E-06	1.41E-05	6.18E-05	4.24E-05	1.86E-04
206-44-0	Fluoranthene	3.00E-06	2.94E-09	3.53E-08	1.55E-07	1.06E-07	4.64E-07
86-73-7	Fluorene	2.80E-06	2.75E-09	3.29E-08	1.44E-07	9.88E-08	4.33E-07
50-00-0	Formaldehyde	7.20E-02	7.06E-05	8.47E-04	3.71E-03	2.54E-03	1.11E-02
110-54-3	Hexane	1.80E+00	1.76E-03	2.12E-02	9.28E-02	6.35E-02	2.78E-01
193-39-5	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	2.12E-08	9.28E-08	6.35E-08	2.78E-07
91-20-3	Naphthalene	6.10E-04	5.98E-07	7.18E-06	3.14E-05	2.15E-05	9.43E-05
85-01-8	Phenanathrene	1.70E-05	1.67E-08	2.00E-07	8.76E-07	6.00E-07	2.63E-06
129-00-0	Pyrene	5.00E-06	4.90E-09	5.88E-08	2.58E-07	1.76E-07	7.73E-07
108-88-3	Toluene	3.40E-03	3.33E-06	4.00E-05	1.75E-04	1.20E-04	5.26E-04
7440-38-2	Arsenic	2.00E-04	1.96E-07	2.35E-06	1.03E-05	7.06E-06	3.09E-05
7440-41-7	Beryllium	1.20E-05	1.18E-08	1.41E-07	6.18E-07	4.24E-07	1.86E-06
7440-43-9	Cadmium	1.10E-03	1.08E-06	1.29E-05	5.67E-05	3.88E-05	1.70E-04
7440-47-3	Chromium	1.40E-03	1.37E-06	1.65E-05	7.21E-05	4.94E-05	2.16E-04
7440-48-4	Cobalt	8.40E-05	8.24E-08	9.88E-07	4.33E-06	2.96E-06	1.30E-05
7439-96-5	Manganese	3.80E-04	3.73E-07	4.47E-06	1.96E-05	1.34E-05	5.87E-05
7439-97-6	Mercury	2.60E-04	2.55E-07	3.06E-06	1.34E-05	9.18E-06	4.02E-05
7440-02-0	Nickel	2.10E-03	2.06E-06	2.47E-05	1.08E-04	7.41E-05	3.25E-04
7782-49-2	Selenium	2.40E-05	2.35E-08	2.82E-07	1.24E-06	8.47E-07	3.71E-06
			VOC HAPs Subtotal	2.21E-02	9.68E-02	6.63E-02	2.91E-01
			Metal HAPs Subtotal	6.54E-05	2.87E-04	1.96E-04	8.60E-04
			Total HAPs	2.22E-02	9.71E-02	6.65E-02	2.91E-01

References:
1. AP42 Table 1.4-3 and Table 1.4-4.

Conversion from lb/10^6 scf to lb/MMBtu (divide by) = 1020

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

No. 2 Fuel Combustion Emissions Boilers BLR1-3

Burner Rating =	12	MMBtu/hr
Operating Hours =	500	hrs/yr

No. 2 Fuel Oil

Ash Content (%) =	NA	%
Sulfur Content (%) =	0.5	%
Heat Content of Fuel =	140,000	BTU/gallon
Fuel Usage[5] =	81.7	gallons per hour
	40,850	gallons per year

No. 2 Fuel Oil

Criteria Pollutants	EF	Emissions			
		One Unit		Three Units	
	lb/10^3 gallons	lb/hr	tons/year	lb/hr	tons/year
CO	5	0.41	0.10	1.23	0.30
NO_X	20	1.63	0.41	4.89	1.23
PM (filterable)	2	0.16	0.04	0.48	0.12
PM2.5 [1] (filterable)	0.25	0.02	0.01	0.06	0.03
PM_{10} [1] (filterable)	1	0.08	0.02	0.24	0.06
PM (condensable)[2]	1.3	0.11	0.03	0.33	0.09
PM2.5 (condensable)[2]	1.3	0.11	0.03	0.33	0.09
PM10 (condensable)[2]	1.3	0.11	0.03	0.33	0.09
SO_x	71	5.80	1.45	17.4	4.35
VOC/TOC	0.34	0.03	0.01	0.09	0.03
PM(total)	NA	0.27	0.07	0.81	0.21
PM2.5 (total)	NA	0.13	0.04	0.39	0.12
PM10 (total)	NA	0.19	0.05	0.57	0.15

Hazardous Air Pollutants (HAPs)[3]	Emission Factor (lbs/10^5 gallons)	One Unit		Three Units		TAP Limit[5]	Three Units TAP Emissions
		(lbs/hour)	(tons/year)	lbs/hr	tons/year	(lbs/year)	(lbs/year)
Lead[4]	9	0.0002	0.0001	0.0006	0.0003	1,200	0.30
Benzene	2.14E-04	0.0001	0.0001	0.0003	0.0003	1,000	0.15
Ethylbenzene	6.36E-05	0.0001	0.0001	0.0003	0.0003		
Formaldehyde	3.03E-02	0.0025	0.0007	0.0075	0.0021	1,000	3.75
Naphthalene	1.13E-03	0.0001	0.0001	0.0003	0.0003		
Toluene	6.20E-03	0.0006	0.0002	0.0018	0.0006		
Xylene	1.09E-04	0.0001	0.0001	0.0003	0.0003		
Total HAPs		0.0037	0.0014	0.0111	0.0042		

Rounding to = 2

References:
Emission factors from AP-42, 1.3, Fuel Oil Combustion, 9/98.

Notes:
1. PM10 and PM2.5 size distribution from Table 1.3-6.

Notes:

3.Table 1.3-9 (AP-42).
4. Lead emissions from Distillate Fuel Oils is 9 lbs/10^12 Btu.
5. Toxic Air Pollutant (TAP) 45CSR13 Table 45-13A.

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

Natural Gas Combustion Emissions Boilers BLR4-6

	2,000	scf/hr	Estimated
Fuel Use =	1,000	Btu/scf	Standard
Heat Content of Fuel =	2,000,000	Btu/hr	Provided
Maximum Burner Rating =	8,760	hrs/year	
Hours of Operation =	0.0020	10^6 scf per hour	
Fuel Usage =	17.52	10^6 scf/year	

HAP

Emission Type	EF[2] lb/10^6 scf	Emissions One Unit lb/hr	One Unit tons/year	Three Units lb/hr	Three Units tons/year	EF Reference
PM	7.6	0.02	0.09	0.06	0.27	Table 1.4-2
PM10[1]	7.6	0.02	0.09	0.06	0.27	See Note 1
PM2.5[1]	7.6	0.02	0.09	0.06	0.27	See Note 1
SO_2	0.6	0.001	0.01	0.004	0.03	Table 1.4-2
NOx	See below	0.12	0.52	0.36	1.56	Manufact
CO	See below	0.17	0.74	0.51	2.22	Manufact
VOC	5.5	0.01	0.05	0.03	0.15	Table 1.4-2

Rounding to = 2

Manufacturer Criteria Emissions for Natural Gas

Emission Type	Flue Gas Flow Rate lbs/hr	Emissions PPM	lb/hr
CO	1,704	100	0.17
NO_X	1,704	70	0.12

1 - It is assumed that PM10 and PM2.5 are equal to TSP (PM).
2 - Emission factors from AP-42, Section 1.4 dated 7/98.

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

Natural Gas Combustion HAPs Boilers BLR4-6

	One Unit	Three Units	
Boiler Rating =	2	6	MMBtu/hr
Operating Hours =	8,760	8,760	hrs/yr

CAS No.	Hazardous Air Pollutants	EF[1]		One Unit		Three Units	
		lb/10^6 scf	lb/MMBtu	lb/hr	tons/year	lb/hr	tons/year
91-57-6	2-Methylnaphthalene	2.40E-05	2.35E-08	4.71E-08	2.06E-07	1.41E-07	6.18E-07
56-49-5	3-Methylchloranthrene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
57-97-6	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	3.14E-08	1.37E-07	9.41E-08	4.12E-07
83-32-9	Acenaphthene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
203-96-8	Acenaphthylene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
120-12-7	Anthracene	2.40E-06	2.35E-09	4.71E-09	2.06E-08	1.41E-08	6.18E-08
56-55-3	Benz(a)anthracene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
71-43-2	Benzene	2.10E-03	2.06E-06	4.12E-06	1.80E-05	1.24E-05	5.41E-05
50-32-8	Benzo(a)pyrene	1.20E-06	1.18E-09	2.35E-09	1.03E-08	7.06E-09	3.09E-08
205-99-2	Benzo(b)fluoranthene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
191-24-2	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	2.35E-09	1.03E-08	7.06E-09	3.09E-08
205-82-3	Benzo(k)fluoranthene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
218-01-9	Chrysene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
53-70-3	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	2.35E-09	1.03E-08	7.06E-09	3.09E-08
25321-22-6	Dichlorobenzene	1.20E-03	1.18E-06	2.35E-06	1.03E-05	7.06E-06	3.09E-05
206-44-0	Fluoranthene	3.00E-06	2.94E-09	5.88E-09	2.58E-08	1.76E-08	7.73E-08
86-73-7	Fluorene	2.80E-06	2.75E-09	5.49E-09	2.40E-08	1.65E-08	7.21E-08
50-00-0	Formaldehyde	7.20E-02	7.06E-05	1.41E-04	6.18E-04	4.24E-04	1.86E-03
110-54-3	Hexane	1.80E+00	1.76E-03	3.53E-03	1.55E-02	1.06E-02	4.64E-02
193-39-5	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	3.53E-09	1.55E-08	1.06E-08	4.64E-08
91-20-3	Naphthalene	6.10E-04	5.98E-07	1.20E-06	5.24E-06	3.59E-06	1.57E-05
85-01-8	Phenanathrene	1.70E-05	1.67E-08	3.33E-08	1.46E-07	1.00E-07	4.38E-07
129-00-0	Pyrene	5.00E-06	4.90E-09	9.80E-09	4.29E-08	2.94E-08	1.29E-07
108-88-3	Toluene	3.40E-03	3.33E-06	6.67E-06	2.92E-05	2.00E-05	8.76E-05
7440-38-2	Arsenic	2.00E-04	1.96E-07	3.92E-07	1.72E-06	1.18E-06	5.15E-06
7440-41-7	Beryllium	1.20E-05	1.18E-08	2.35E-08	1.03E-07	7.06E-08	3.09E-07
7440-43-9	Cadmium	1.10E-03	1.08E-06	2.16E-06	9.45E-06	6.47E-06	2.83E-05
7440-47-3	Chromium	1.40E-03	1.37E-06	2.75E-06	1.20E-05	8.24E-06	3.61E-05
7440-48-4	Cobalt	8.40E-05	8.24E-08	1.65E-07	7.21E-07	4.94E-07	2.16E-06
7439-96-5	Manganese	3.80E-04	3.73E-07	7.45E-07	3.26E-06	2.24E-06	9.79E-06
7439-97-6	Mercury	2.60E-04	2.55E-07	5.10E-07	2.23E-06	1.53E-06	6.70E-06
7440-02-0	Nickel	2.10E-03	2.06E-06	4.12E-06	1.80E-05	1.24E-05	5.41E-05
7782-49-2	Selenium	2.40E-05	2.35E-08	4.71E-08	2.06E-07	1.41E-07	6.18E-07
			VOC HAPs Subtotal	3.69E-03	1.61E-02	1.11E-02	4.84E-02
			Metal HAPs Subtotal	1.09E-05	4.78E-05	3.27E-05	1.43E-04
			Total HAPs	3.70E-03	1.62E-02	1.11E-02	4.86E-02

References:
1. AP42 Table 1.4-3 and Table 1.4-4.

Conversion from lb/10^6 scf to lb/MMBtu (divided by) = 1020

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

No. 2 Fuel Combustion Emissions Boilers BLR4-6

Burner Rating =	2	MMBtu/hr
Operating Hours =	500	hrs/yr

No. 2 Fuel Oil

Ash Content (%) =	NA	%
Sulfur Content (%) =	0.5	%
Heat Content of Fuel =	140,000	BTU/gallon
Fuel Usage[6] =	13.5	gallons per hour
	6,750	gallons per year

No. 2 Fuel Oil

Criteria Pollutants	EF	Emissions			
		One Unit		Three Units	
	lb/10^3 gallons	lb/hr	tons/year	lb/hr	tons/year
CO	5	0.07	0.02	0.21	0.06
NO_X	20	0.27	0.07	0.81	0.21
PM[1] (filterable)	2	0.03	0.01	0.09	0.03
PM2.5 [1] (filterable)	0.25	0.003	0.001	0.01	0.003
PM10[1] (filterable)[2]	1	0.01	0.003	0.041	0.01
PM (condensable)[2]	1.3	0.02	0.004	0.06	0.013
PM10 (condensable)[2]	1.3	0.02	0.004	0.06	0.013
PM2.5 (condensable)[2]	1.3	0.02	0.004	0.06	0.013
SO_x	71	0.96	0.24	2.88	0.72
VOC/TOC	0.34	0.02	0.001	0.06	0.003
PM10 (condensable)	1.3	0.02	0.001	0.06	0.003
PM (total)	NA	0.05	0.01	0.15	0.04
PM2.5 (total)	NA	0.02	0.01	0.07	0.02
PM10 (total)	NA	0.03	0.005	0.10	0.01

Hazardous Air Pollutants (HAPs)[3]	Emission Factor	Emissions				TAP Limit[5]	Three Units TAP Emissions
		One Unit		Three Units			
	lbs/10^5 gallons	lbs/hour	tons/year	lbs/hr	tons/year	lbs/year	lbs/year
Lead[4]	9	0.0001	0.0001	0.0003	0.0003	1,200	0.15
Benzene	2.14E-04	0.0001	0.0001	0.0003	0.0003	1,000	0.15
Ethylbenzene	6.36E-05	0.0001	0.0001	0.0003	0.0003		
Formaldehyde	3.03E-02	0.0005	0.0002	0.0015	0.0006	1,000	0.75
Naphthalene	1.13E-03	0.0001	0.0001	0.0003	0.0003		
Toluene	6.20E-03	0.0001	0.0001	0.0003	0.0003		
Xylene	1.09E-04	0.0001	0.0001	0.0003	0.0003		
Total HAPs		0.0011	0.0008	0.0033	0.0024		

Rounding to = 2

References:
Emission factors from AP-42, 1.3, Fuel Oil Combustion, 9/98.
Notes:

2. Condensable EF from Table 1.3-2.
3.Table 1.3-9 (AP-42).
4. Lead emissions from Distillate Fuel Oils is 9 lbs/10^12 Btu.
5. Toxic Air Pollutant (TAP) 45CSR13 Table 45-13A.
6. Manufacturer's data.

Federal Correctional Institution
Beckley Facility

Potesta & Associates, Inc.
Project No. 0101-16-0328

By: ADM
Date: 08/24/2016

Checked By: JJD
Date: 08/26/2016

Generator No. 3: (G-003), Model 3516C

Fuel Consumption:	141.5	gallons/hour (standby)
Assumed Heating Value of Diesel Fuel:	140,000	Btu/gallon
Maximum Power:	2,990	bhp (standby)
Maximum Fuel Input:	19.81	MMBtu/hour

Constants	
0.002204622	lb/ gram

Hours Per Year[4] = 500

Rounding to 4

Criteria Pollutant	Emission Factor[1] (grams/HP-hr)	Emissions (lbs/hour)	(tons/yea
HC (VOC)	0.10	0.66	0.17
NO_X	5.50	36.26	9.07
CO	0.30	1.98	0.50
PM/PM10/PM2.5	0.10	0.66	0.17
$SO2^2$	0.002	0.030	0.008

Hazardous Air Pollutants (HAPs)[2]	Emission Factor (lb/MMBtu)	Emissions (lbs/hour)	(tons/yea
Benzene[3]	7.76E-04	0.0154	0.0039
Toluene	2.81E-04	0.0056	0.0014
Xylenes	1.93E-04	0.0038	0.0010
Formaldehyde[3]	7.89E-05	0.0016	0.0004
Acetaldehyde	2.52E-05	0.0005	0.0001
Acrolein	7.88E-06	0.0002	0.0001
Naphthalene	1.30E-04	0.0026	0.0007
	Total HAPS	0.0297	0.0076

Notes:

1. Manufacturer supplied emission factors.
2. SO2 emission factor is lb/MMBtu taken from AP-42 3.4-3.
3. Toxic Air Pollutant (TAP) 45CSR13 Table 45-13A.
4. 500 hours per Office of Air Quality Planning and Standards Memorandum "Calculating Potential to Emit (PTE) for Emergency Generators", September 6, 1995.

ATTACHMENT O

MONITORING/RECORDKEEPING/REPORTING/ TESTING PLANS

ATTACHMENT O

MONITORING, RECORDKEEPING, REPORTING AND TESTING PLANS

Federal Correctional Institution is requesting no changes to the existing monitoring, recordkeeping, reporting and testing requirements of R13-2170A.

ATTACHMENT P

PUBLIC NOTICE

ATTACHMENT P

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Federal Correctional Institution has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Modification to Permit R13-2170A for their Beckley facility to replace the generators. The facility is located in Beaver in Raleigh County, West Virginia. The latitude and longitude coordinates are: 37.8166 and -81.1290.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be: PM of negative 0.07 tons per year (tpy); PM10 of negative 0.06 tpy; PM2.5 of negative 0.05 tpy; SO_2 of negative 2.03 tpy; NO_x of negative 3.01 tpy; CO of negative 2.10 tpy; VOC of negative 0.19 tpy; and total HAPs of 0.35 tpy.

The generator has been installed and is operational. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this the [**INSERT DATE**] day of September, 2016.

By: Federal Correction Institution
Billie Jones
Facility Manager
PO Box 1280
Beaver, West Virginia 25813

APPENDIX 1

GENERATOR INFORMATION

	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY **2016 MODEL YEAR** **CERTIFICATE OF CONFORMITY** **WITH THE CLEAN AIR ACT**	**OFFICE OF TRANSPORTATION** **AND AIR QUALITY** **ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Caterpillar Inc. (U.S. Manufacturer or Importer) **Certificate Number:** GCPXL78.1NSF-021	**Effective Date:** 10/13/2015 **Expiration Date:** 12/31/2016	Byron J. Bunker, Division Director Compliance Division	**Issue Date:** 10/13/2015 **Revision Date:** N/A

Model Year: 2016 **Manufacturer Type:** Original Engine Manufacturer **Engine Family:** GCPXL78.1NSF	**Mobile/Stationary Indicator:** Stationary **Emissions Power Category:** kW>900 **Fuel Type:** Diesel **After Treatment Devices:** Diesel Oxidation Catalyst, Ammonia Slip Catalyst, Selective Catalytic Reduction **Non-after Treatment Devices:** Electronic Control, Engine Design Modification **FELs:** PM 0.09 g/kW-hr

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 1039, Subpart H. Failure to comply with these provisions may render this certificate void *ab initio*.

CATERPILLAR

Engine Emissions Data

For Emissions feedback and questions submit request form

This emission data is Caterpillar's best estimate for this rating. If actual emissions are required then an emission test needs to be run on your engine.

Serial Number (Machine)	
Serial Number (Engine)	**DD600841**
Sales Model	3516
Build Date	2015-12-09
Interlock Code Progression	No Interlock Code Progression
As Shipped Data	
Engine Arrangement Number	3994236
Certification Arrangement	
Test Spec Number	3704959
Regulatory Status	EPA Emergency Stationary at constant speed
Labeled Model Year	2016
Family Code	GCPXL78.1NZS
Flash File	4809413
Flash File Progression	4809413
CORR FL Power at RPM	2,990 HP (2,230.0 KW) at 1800 RPM
Advertised Power	2,937HP 1,800RPM
Total Displacement	69

This is not an official emission certificate. This is for emission data information only.

Need emission replacement label? Click here!

Caterpillar Confidential: **Green**
Content Owner: Commercial Processes Division
Web Master(s): PSG Web Based Systems Support
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ENGINE TEST [DD600841]

JANUARY 29, 2016

(DD600841)-ENGINE (G1X00539)-GENERATOR (SFJ00842) -GENSET

For Help Desk Phone Numbers Click here

Sales Model: 3516

Built Date: 09Dec2015 **Tested Date:** 10Dec2015 **Shipped Date:** 19Jan2016

Tested: LB **Plant:** Lafayette **Cell Number:** 505

Test Element	Eng Updates	Test Value	Test Spec Value	Measure
Spec Number	3704959	3704959	3704959	
Arrangement Number		3994236	3994236	
Corr Fl Power		2,970	2,990	HP
Speed		1,800	1,800	RPM
COR FL FUEL RATE		140.6	141.5	GAL/HR
CSFC		0.335	0.335	LB/HP-HR
Adj Boost		75.0	78.5	IN HG
Fuel Pressure		62	62	PSI
Oil Pressure		55	57	PSI
TQ COR FUEL RATE				GAL/HR
TQ CK CSFC				LB/HP-HR
TQ CK ADJ BST				IN HG
Torq Ck Speed				RPM
TQ CK COR TQ				LB.FT
Low Idle Speed		899	900	RPM
Low Idle Oil Pressure		53	52	PSI
High Idle Speed		1,817	1,818	RPM
Response Time				
FL Static Fuel Setting		1.031	1.031	IN
Timing Dim				
FLS (INTRCPT)	3			
FTS (SLOPE)	0			
Advertised Power			2,937	hp
Advertised Speed			1,800	RPM
Advertised Torque				LB.FT
Adjusted Boost (Gas Blending)				HG
Corrected Fuel Rate - Gas (Gas Blending)				BTU/MIN
Corrected Fuel Rate - Diesel (Gas Blending)				GAL/HR
Full Load Fueling (Gas Blending)				MM3/ST
Gas Substitution Ratio (Gas Blending)				%
Corr Full Load Power (Gas Blending)				HP
Full Load Speed (Gas Blending)				RPM
Exhaust Back Pressure				PSI
TQ CK Exhaust Back Pressure				PSI
Ataac Delta Pressure				PSI

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ELECTRIC POWER - Technical Spec Sheet
STANDARD

3516C
2000 ekW/ 2500 kVA/ 60 Hz/ 1800 rpm/ 480 V/ 0.8 Power Factor

Rating Type: STANDBY

Emissions: U.S. EPA Stationary Emergency Use Only

Heat Rejection		
Heat Rejection to Jacket Water	759 kW	43150 Btu/min
Heat Rejection to Exhaust (Total)	1788 kW	101696 Btu/min
Heat Rejection to Aftercooler	672 kW	38240 Btu/min
Heat Rejection to Atmosphere from Engine	133 kW	7564 Btu/min
Heat Rejection to Atmosphere from Generator	96 kW	5482 Btu/min

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	5925 skVA
Current	3007 amps
Frame Size	1625
Excitation	IE
Temperature Rise	125 ° C

Emissions (Nominal)[3]		
NOx	2749.5 mg/Nm³	5.5 g/hp-hr
CO	142.8 mg/Nm³	0.3 g/hp-hr
HC	45.2 mg/Nm³	0.1 g/hp-hr
PM	10.3 mg/Nm³	0.0 g/hp-hr

DEFINITIONS AND CONDITIONS

1. For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

2. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

3. Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

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